

2025 IEEE Frontiers in Education Conference (FIE 2025)

**Nashville, Tennessee, USA
2-5 November 2025**

Pages 1–666

IEEE Catalog Number: CFP25FIE-POD
ISBN: 979-8-3315-0106-8



Copyright © 2025, IEEE

All Rights Reserved

Copyright and Reprint Permissions:

Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

*** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.

IEEE Catalog Number:	CFP25FIE-POD
ISBN (Print-On-Demand):	979-8-3315-0106-8
ISBN (Online):	979-8-3315-0105-1
ISSN:	1539-4565

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA

Phone:	(845) 758-0400
Fax:	(845) 758-2633
E-mail:	curran@proceedings.com
Web:	www.proceedings.com

TABLE OF CONTENTS

Navigating Digital Frontiers: A Comprehensive Analysis of Mobile Device Integration in Engineering Instruction in Bangladesh Using Mobile Learning Readiness Survey	1
<i>Ninsiima Hafusa, Md. Shahadat Hossain Khan, Mahbub Hasan</i>	
Reflecting on What it Means to be a Faculty Member Using the NPIB Model: A Guide for Self-Reflection	6
<i>Stephanie Cutler, Cassandra McCall, Yu Xia</i>	
ASTRO: A Semi-Automated Grading and Feedback System for Programming Assignments	16
<i>Jonathan W. Browning, John Bustard, Neil Anderson</i>	
WIP: Integrating Industry and Research in STEM Transportation Festivals for Middle and High School Audiences	24
<i>Hope Whiteside, Joni M. Lakin, Bernadette Beavers-Forrest, Kay Love</i>	
WIP: Supporting Engaging K12 Outreach Through Engineer-Educator Collaborations	29
<i>Joni M. Lakin, Hope Whiteside, Virginia A. Davis, Kay Love, Cheryl Seals, Edward W. Davis</i>	
Inspiring Student Engagement in A Hybrid Signals and Systems Course	34
<i>Mary Lanzerotti, Scott Dunning, Michael Buehrer, Ahmad Safaai-Jazi, Nektaria Tryfona, Luke Lester Creed Jones, Kenneth Reid, Muhammad Dawood</i>	
Gender Diversity in Computer Science Through a Global Lens	44
<i>Nawar Wali, Sara Hooshangi</i>	
Exam Grades Largely Unaffected by Practice Exams in a Signals and Systems Course	53
<i>Mary Lanzerotti, Scott Dunning, Michael Buehrer, Ahmad Safaai-Jazi, Nektaria Tryfona, Luke Lester Creed Jones, Kenneth Reid, Muhammad Dawood</i>	
Enhancing Algorithmic Thinking and Emotional Resilience in Programming Education Through AI Powered Virtual Tutoring	62
<i>Julio R. Martinez, Mario Chong, Susana Maya, María Alejandra Caicedo, Ana Luna</i>	
WIP: Implementing and Assessing Maker Laboratory Networks in Amazonian Schools: A Multi-Context Analysis	70
<i>Diego C. Sales, Adriana G. do N. Maia, Jose P. Q. Neto, Renan C. Santos</i>	
Exploring Early-Career Engineering Faculty Experiences Teaching Using Social Cognitive Theory	75
<i>Marcus V. Melo de Lyra, Jialing Wu, Adam R. Carberry</i>	
WIP: “I May Feel Like I'm Falling Apart but Other People Can't See It”: Exploring Access Fatigue Among Disabled Women and Nonbinary Students in Engineering Degree Programs	85
<i>Rachel Figard</i>	
A User-Experience Study of Cyber-Guardian: A Role-Playing Educational Game for Learning Cryptographic Primitives in Authentic Cybersecurity Scenarios	90
<i>Shan Huang, JiWoo Lee, Geoffrey L. Herman, Alan T. Sherman</i>	
Do LLMs Make Cybersecurity Mistakes? An Evaluation of LLMs Performance on Cybersecurity Concept Inventories	99
<i>Shan Huang, Geoffrey L. Herman, Alan T. Sherman</i>	

A Pedagogically-Focused Translation Pipeline for Designing Loops in Programming	108
<i>L. Joshua Crotts, Chung-chieh Shan, Sam Tobin-Hochstadt</i>	
An Approach to Learning Path Personalization in E-Tutoring with Knowledge Space Theory	117
<i>Xiaobu Yuan, Kitty Duong</i>	
[Work in Progress] How to Transform Humanitarian Engineering Student Competitions for the Well-Being of Communities? The Case of IEEE Tech4Good Colombia	124
<i>Juan Lucena, Diana Duarte</i>	
WIP: High School Student Experiences in Engineering: Perspectives and Insights	129
<i>Sanjeev M. Kavale, Medha Dalal</i>	
WIP: Professional Identity and Design Engagement: A Study of Practicing Engineers' Identity in Industry Settings	134
<i>Stephanie Adams, Shane Brown, James Huff, Elliott Clement</i>	
Research on the Practical Teaching Mode for Cultivating Autonomous Learning Abilities in Networking Courses	139
<i>Wenhui Zheng, Hui Li, Rentao Gu, Yuefeng Ji</i>	
WIP: Novel Pre-Lecture Technique for Accelerated Student Engagement in Circuit Analysis Courses	149
<i>Renny E. Badra</i>	
WIP: Accurate, Fair and Transparent Approach to Random Item Selection to Reduce Grading Workload	153
<i>Renny E. Badra</i>	
Fostering Practical Skills in Computer Networks with IoT-Centric Project-Based Learning	158
<i>Khairul Mottakin, Zheng Song, Khalid Kattan</i>	
Improving Class Quality and Learning Experience for Students Through the Use of LLMs: a Case Study	167
<i>Juan Ortiz Couder, Lynn Vonderhaar, Omar Ochoa, Massood Towhidnejad</i>	
Community-Oriented Project-Based Learning for a Web Technologies Course	175
<i>Zheng Song, Sai Vikram Patnaik, Hayat Hachem, Ali Abazeed</i>	
When Project-Based Learning Meets Edge Computing: An Experience Report	184
<i>Zheng Song, Summit Shrestha, Zhengquan Li, Khairul Mottakin, Qiang Zhu</i>	
WIP: Engineering Doctoral Students' Perceptions of Transformative Experiences in Developing Non-Technical Competencies for Faculty Careers	193
<i>Ibukunoluwa E Salami, Logan A. Perry</i>	
WIP: Centering African American Culture in Engineering Education: Impact of an Africancentered Pedagogy and Curriculum	198
<i>DeAnna Bailey, Kate Rotindo, Kendal Knox, Charnee Bowens, Krystal Dunn, James Holly</i>	
A Retrospective Study to Understand Student Coding Style Quality via Static Analysis	203
<i>Francisco T. S. S. Pereira, Roberto A. Bittencourt, Elaine H. T. Oliveira, David B. F. De Oliveira</i>	
WIP: Bringing Classical and Quantum Machine Learning in Biomedical and Environmental Applications to the Community College Setting	212
<i>Jean S. Larson, Anna M. Haywood, Frank S. Marfai, Milton E. Johnson, Niraj Anil Babar, Glen Uehara Judith Klein-Seetharaman, Daniel Gulick, Jennifer Blain Christen, Andreas Spanias</i>	

Exploring Traces from Algorithm Simulation: Students' Conceptions of Dijkstra's Algorithm	217
<i>Artturi Tilanterä, Ari Korhonen, Otto Seppälä, Teemu Taivainen, Inka Croell</i>	
Fostering Problem-Solving in Introductory Programming Through Software Testing: A Systematic Review	226
<i>André Almeida, Dalton D. S. Guerrero, Wilkerson L. Andrade</i>	
Work-in-Progress: College-Industry Partnership for Professional Development Through Online Education: Two Case Studies	234
<i>Reza Rahdar, Yuetong Lin, Jorge Ortega, William Muldoon</i>	
Code Comprehension for Novice Students: Teaching, Assessment, Tools, and Challenges	239
<i>Valéria Cavalcanti, Wilkerson L. Andrade</i>	
Enhancing Student Engagement Through Example-Based Short Videos	248
<i>Suman Saha, Mahfuza Farooque</i>	
Understanding the Impact of the FossilSketch Application using Students' Perceptions	257
<i>Anna Stepanova, Saira Anwar, Christina Belanger, Tracy Hammond</i>	
Exploring the Impact of Pre-College Resources and Support on Spatial Skills Development in Undergraduate Engineering Students	265
<i>Narjes Khorsandi Koujel, Justin C. Major, Stephanie Farrell</i>	
Evolving Software Engineering Education Through Undergraduate Peer-Mentorship	272
<i>Azim Abdool, Daniel Joseph Ringis, Akash Pooransingh, Aniel Maharajh</i>	
Pathway to Computing: An Innovative Approach to Inviting Non-Computing Students into Graduate Computer Science Programs	280
<i>James Anderson, Jing Wang, Xinming Ou, Sudeep Sarkar</i>	
WIP: Advancing Transdisciplinary Graduate Training at the Intersection of AI and Arid Land Agriculture	287
<i>Adán M. Delval, Enrico Pontelli, Ruth Torres Castillo, Wendy Chi</i>	
Enhancing Undergraduate IT Curriculum with Infrastructure and Configuration Automation: A Practical Approach Using Vagrant, Ansible, and Terraform	292
<i>Emil H Salib</i>	
A Novel Approach on Teaching Dispersion in Coaxial Cables with Low Pass Filters	301
<i>Lucas C. Ruff, Wenli W. Huang, Kirk A. Ingold</i>	
WIP: Outcomes Based Evaluation of a Virtual Multi-Institutional Program Showcase: Student and Program Director Perspectives	307
<i>Cheryl Bodnar, Holly Matusovich</i>	
Sustainability Education for Young Children: Introductory Life Cycle Assessment	312
<i>Bethany L. Willis, Annie Padwick, Antonio Portas, Joe Shimwell, Melanie Horan, Carol Davenport</i>	
<i>Neil S. Beattie</i>	
WIP: Using Reverse Engineering to Enhance Student Confidence and Interest in Electrical and Computer Engineering	317
<i>Benjamin Manning, Jason W. Morphew</i>	

WIP: Exploring the Impact of Scrum on Underrepresented Students in Engineering	322
<i>Sarah Reynolds, Alexandra Newcomb, Lynn Vonderhaar, Omar Ochoa, Massood Towhidnejad James Pembridge</i>	
Adapting Globally Distributed Scrum Team Strategies for University Classrooms	327
<i>Caleb Ramos, Sarah Reynolds, Lynn Vonderhaar, Alexandra Newcomb, Omar Ochoa Massood Towhidnejad, James Pembridge</i>	
WIP: Improving Codebook Application for Studying Engineering Intuition	335
<i>Anu Singh, Elif Eda Miskioğlu, Kaela Martin, Adam Carberry</i>	
Bridging Educator Gaps in Computer Science: A Collaborative Professional Development Model	340
<i>Aetesam Ali Khan Ashar, Sharmin Akhter, Jiangjiang Liu</i>	
LSAMP Serves as a Medium for Developing Support Networks for STEM Undergraduate Retention	346
<i>Jordan Peyton, Olivia Callahan, Minso Choi, Angela Ebreo</i>	
Use of Generative AI Tools in Software Quality Assurance Work	351
<i>Bruce R. Maxim, Zheng Song, Belen A. Garcia de Hurtado, Foyzul Hassan, Shimil Shijo</i>	
Developing Leadership Skills in Software Engineering Students - a Case Study of a Leadership Development Framework	361
<i>Nicolas Nascimento, Afonso Sales, Rafael Chanin</i>	
Enhancing Computer Network Education Through Immersive Virtual Environments: A Study on NetVerse Edu	370
<i>Erberson Evangelista Vieira, Francisco Petrônio De A. Medeiros, Paulo Ditarso Maciel Júnior</i>	
Leveraging Large Language Models and Human-In-The-Loop for Interactive Learning Pipelines	380
<i>Haoze Du, Dinesh Kannan, Bhavishya Tarun, Edward F. Gehringer</i>	
Does My Concept Map Smell? Improving Concept Map Readability via Software Engineering Principles	388
<i>Yien Wang, David Umphress</i>	
WIP: Identifying Barriers for Students with Disabilities in Stem Undergraduate Laboratory and Design Courses	397
<i>Rebecca M. Reck, Katie Ansell, Christopher Schmitz, Chandrasekhar Radhakrishnan, David Mussulman Natalie M. Taylor, Jessica TerBush</i>	
WIP: Tutoring System Using a Large Language Model	402
<i>Balaji R Rao, Naveen Mathews Renji, Carlo Lipizzi</i>	
WIP: Workforce Development and Student Success Through the Hidden Curriculum	407
<i>Charles Patrick, Travis Carrell, Annie Hedman, John Horn, Staci Horn</i>	
WIP: Expert Feedback and Student Think-Alouds for the Learning through Making Instrument	412
<i>Leonardo Polletini Marcos, Robert Nagel, Julie Linsey, Melissa Alemán, Kerrie A. Douglas, Eric Holloway</i>	
Transforming Risk Management in a Multidisciplinary Design Course: Considering Risk as a Language of Connection to Stakeholders	416
<i>Lynn Hall, Bob Rhoads, Lynn Hall</i>	
WIP: Enhancing Internationalization of Engineering Students: Factors and Consequences	424
<i>Ferran Badía, Alvaro De Gracia, Francesc Giné, Josep Lluís Lérida, Margarita Moltó-Aribau, Magda Valls</i>	

WIP: Exploring Student Reported Barriers to Success in a Computer Engineering Department	429
<i>Andrew Danowitz, Lynne Slivovsky</i>	
WIP: Immersive Case Studies to Improve Process Safety Judgments in Chemical Engineering	434
<i>Margaret Bowman, Brittany Butler-Morton, Erick Ayala-Ortiz, Aadan Plank, Cheryl Bodnar</i>	
Enhancing Teamwork in Project-Based Learning: Challenges, Reflections, and Strategies for Improvement	439
<i>Aparajita Jaiswal, Paul Thomas, Prateek Jaiswal, Sudip Vhaduri, Sarah Rodenbeck</i>	
Investigating the Role of the Instructional Team in Enhancing Student Teamwork Experiences in an Introductory Cybersecurity Course	446
<i>Aparajita Jaiswal, Paul Thomas, Sudip Vhaduri, Prateek Jaiswal, Sarah Rodenbeck</i>	
WIP: Teaching Ethical Decision-Making (EDM) in Undergraduate Computer Science and Software Engineering Courses	453
<i>Panagiotis Panos K. Linos, Steve Chenoweth</i>	
From Zero to Poster: Formalizing Undergraduate Research Experiences in Engineering Education	458
<i>Grace Panther, Heidi A. Diefes-Dux</i>	
First-Year Experiences of Asian Graduate Students in an Engineering Education PhD Program: A Collaborative Autoethnography	464
<i>Shuyu Wang, Jordan Min Peyton</i>	
WIP: Learning Skill Intervention in a Large-Enrollment Classroom	472
<i>Curt Schurgers, Saharnaz Baghdadchi, Minju Kim, Marko V. Lubarda, Huihui Qi</i>	
Enhancing Cross-Level Collaboration in HCI Education Through Diary Studies	477
<i>Jixiang Fan, Yusheng Cao, Wei Lu Wang, Natalie Andrus, Morva Saaty, Shiva Ghasemi, Lei Xia, Shuai Liu Scott McCrickard</i>	
Bridging the Gap Between Theoretical and Practical Reinforcement Learning in Undergraduate Education	486
<i>Muhammad Ahmed Atif, Mohammad Shahid Shaikh</i>	
Improving Student Engagement Through Gamification in a Systems Security and Cryptography Course	495
<i>Jonathan W. Browning, Ciara Rafferty, Neil Anderson</i>	
Conversations Over Clicks: Impact of Chatbots on Information Search in Interdisciplinary Learning	502
<i>Hannah Kim, Sergei L. Kosakovsky Pond, Stephen MacNeil</i>	
WIP: Implementing Scrum Methodology in Engineering Capstone Design Courses	511
<i>Haifeng Wang</i>	
WIP: Enhancing Student Engagement and Learning Activity Relevance Through Cross-Course Student Collaboration	516
<i>Stefan Kleinke, Jillian Schiano</i>	
Using Embodied Conversational Agents for Intelligent Tutoring Systems	520
<i>Xiaobu Yuan</i>	
Register as an Emerging Emblem of Disciplinary Identity, Agency and Context	529
<i>Rick Evans, Jean Hunter, Stephanie Fuchs</i>	

Engineering the Unexpected: Faculty Strategies for Navigating Academic Disruptions	538
<i>Gibin Raju, Trini Balart, George Ligler, Kristi Shryock, Kelly Brumbelow</i>	
Do LMS Analytics Predict Student Success? A Quantitative Study of Engagement and Course Performance	545
<i>Kimberly Cook-Chennault, Ahmad Farooq</i>	
Optimizing Diary Studies Learning Outcomes with Fine-Tuned Large Language Models on the Diaryquest Platform	552
<i>Sunggyeol Oh, Jiacheng Zhao, Carson Russo, Michael Bolmer, Jihoo Jeong, Jixiang Fan, Yusheng Cao Wei Lu Wang, Natalie Andrus, Scott McCrickard</i>	
WIP: Defining Collaborative Educational Standards for AI Hardware	561
<i>Ben A. Tanay, Kerrie A. Douglas, Peter Bermel, Maria Oliveri</i>	
Simulation and Hardware in Project-Based Learning for Mobile Robotics and Computer Vision	566
<i>Victor Hayashi, Murilo Zanini Carvalho, Guilherme Cestari, Lisane Valdo, Rodrigo Nicola Michele Bazana Souza, Henrique Mohallem Paiva</i>	
Exploring the Impact of Classroom Composition on Women's Experiential Identity, Interest, and Self-Efficacy in Microelectronics	575
<i>Laura M Cruz Castro, Maryam K Multani, Andrea Ramirez-Salgado, Andrea Goncher, Isabella Victoria Gabriella Taboada</i>	
Adapting to AI: Innovative Approaches for Homework in Computer Science Education	583
<i>James Anderson, Schinnel Small</i>	
LLM Contribution Summarization in Software Projects	588
<i>Rafael Corsi Ferrão, Fabio de Miranda, Diego Pavan Soler, Marcelo Augusto Vieira Graglia</i>	
Engineering Students' Perceptions of Value Creation in Their Impact-Centered and Changemaking Work	596
<i>Jessica Brown, Madeleine N. Fahey, Allyson Hur, Tane Koh, Natsuki Sacks, Isaac Walker, Samuel Wisnoski Stephanos Matsumoto</i>	
Unpacking Wellbeing and Professional Skill Development: A Study of Engineering Graduate Students	605
<i>Syed Ali Kamal, Matilde Luz Sanchez-Peña</i>	
The Collaborative Disposition: What Students Say	614
<i>Renée McCauley, Mihaela Sabin, Bonnie K. MacKellar, Tammy VanDeGrift, Stephanos Matsumoto Amruth N. Kumar</i>	
WIP: Investigating the Effect of Gendered Seating Proximity on Classroom Success for Female Engineering Students	623
<i>Cassandra Savukinas, Kayla D. Taylor, Ashley Lear</i>	
Developing Lifelong Learning Competencies Through Team-Based Literature Review Assignments for Online Graduate Courses	628
<i>Arko Barman</i>	
Do LMS Analytics Predict Student Success? A Quantitative Study of Engagement and Course Performance	637
<i>Kimberly Cook-Chennault, Ahmad Farooq</i>	

Emotional Patterns of Engineering University Instructors Through Cluster Analysis	644
<i>Irene Magara, Grace Panther</i>	
Gamification of a Financial Literacy Course Offered to First Year Engineering Students at a Hispanic Serving Institution	650
<i>Sarah Huizar, Diane Elisa Golding, Victor M. Garcia, Helen E. Geller, Peter Golding, Annalisa Perez</i>	
Enhancing Metacognition Through Cooperative Problem-Based Learning: A Phenomenological Insight of an Engineering Student's Experience	658
<i>Nur Shahira Samsuri, Khairiyah Mohd-Yusof, Fatin Aliah Phang, Nur Fazirah Jumari, Shih Hui Lee</i>	
CacheLab: Enhancing Memory Hierarchy Learning Through Interactive Exploration	667
<i>Hugo Jeller Ferreira, Vinícius Shinohara, Gregório Koslinski, Liana Duenha</i>	
Incorporating Interactive Design Reviews and Industry Experts in Capstone Projects	676
<i>Jim Beachnau, Jeffrey D. Will, Georges El-Howayek</i>	
Stop! Yield! Do Not Enter: A Web-Based Self-Driving Vehicle Simulator for Building AI Literacy and Trust	683
<i>Justin Marwad, Jasmin Marwad, Maryam Abbasalizadeh, Pranathi Rayavaram, Samantha Reig Claire Seungeun Lee, Sashank Narain</i>	
WIP: Case Study: Veterans Skillbridge Program for Hardware Security Workforce Development	692
<i>Hyunju Oh, Hyojung Kim, Wanli Xing, Sandip Ray</i>	
Temporal Correlation Between Women Studying Computing & Human Development Index (30 Years of Data)	697
<i>Louise Meier Carlsen, Maria Stisen Flyger, Josefine Marie Andersen, Nanna Inie, Claus Brabrand</i>	
WIP: Teaching Quantum Communication in High School: Pilot Implementation and Evaluation of a 90-Minute Module	706
<i>Jessica S. Gollmann, Vivian S. Hoffmann, Simone Glevitzky, Lisa M. Küssel, Patrick Seeling Riccardo Bassoli, Holger Boche, Frank H.P. Fitzek</i>	
WIP: Piloting Three New Sociotechnical Modules for an “Introduction to Circuits” Course	711
<i>Karen E. Nortz, Cynthia J. Finelli, Susan M. Lord</i>	
WIP: Scaling Principles of Programming	716
<i>Ryan Meuth, Medha Dalal, Peter Van Leusen</i>	
WIP: Supporting Graduate Students in the Integration of Artificial Intelligence and Agriculture	721
<i>Wendy Chi, Adan Delval, Ruth Torres Castillo, Enrico Pontelli, Huiping Cao</i>	
WIP: The Competency Tilt-Towards Competency Self-Evaluations for Differentiated Learning Experiences	725
<i>Patrick Seeling, Michael P. McGarrv</i>	
Educational Data Privacy: a Differential Privacy Algorithm	730
<i>Rafael Russi Zamboni, Itana Stiubiener</i>	
WIP: Fostering Meaningful Reflective Practice Through Concept Mapping in Graduate Engineering Education	738
<i>Shih Hui Lee, Khairiyah Mohd-Yusof</i>	

WIP: An AI-Based Virtual Assistant for Supporting a Large Engineering Course	743
<i>Deepanshu Gupta, Jorge D. Camba, Travis Fuerst, Jiwei Zhou</i>	
WIP: Applying an Engineering Judgment Framework in Electrical and Computer Engineering Design Education	748
<i>Samuel J. Dickerson, Renee M. Clark</i>	
WIP: Enhancing the Teaching of Traditional Mechanical Engineering Courses Through the Integration of Generative AI Tools	751
<i>Yucheng Liu</i>	
Agile Mobile Application Development: A Multidisciplinary Approach with CBL, Scrum and Lean Startup	756
<i>Afonso Sales, Nicolas Nascimento, Rafael Chanin, Aline de Campos</i>	
Computing and Sciences Summer Program for Middle School Students	765
<i>Sujing Wang, Raymond Doe</i>	
WIP: Teaming Performance as Measured by Peer Evaluations: A Comparison Between Hyflex Team and Face to Face Team	774
<i>Junqiu Wang, Fazel Ranjbar, P.K. Imbrie</i>	
AI Literacy for Community Colleges: Instructors' Perspectives on Scenario-Based and Interactive Approaches to Teaching AI	779
<i>Aparna Maya Warriar, Arav Agarwal, Jaromir Savelka, Christopher A Bogart, Heather Burte</i>	
Machine Learning Algorithms for Student Performance Prediction: A Literature Review	788
<i>Prajith Reddy Pitchapati, Marcia Moraes</i>	
WIP: Guiding, Not Giving: Analyzing the Effectiveness of Guided Problem-Solving in CS1	796
<i>Rajeshwari Deoraj, Jaya Veera Surendra Gupta Kurivella, Marcia Moraes</i>	
Microelectronics Device Fabrication Studio for First Year Engineering Students	801
<i>Albrecht Jander, Pallavi Dhagat, Rachael Cate, Martin Storksdieck</i>	
Designing CS Assignments to Foster Cogitation in the AI Era	807
<i>Jaya Veera Surendra Gupta Kurivella, Rajeshwari Deoraj, Marcia Moraes</i>	
Who Introduces and Who Fixes? Code Quality Dynamics in Collaborative Embedded Systems Projects	816
<i>Rafael Corsi Ferrão, Igor Dos Santos Montagner, Roldofo Azevedo</i>	
WIP: Calls for Change in Foundational Engineering Courses in Middle Years: A Scoping Literature Review	825
<i>Adaugo Enuke, Alexandra Coso Strong</i>	
WIP: Examining Interactions of Undergraduate Service Learners in K-16 Engineering and Computer Science Partnerships	830
<i>Azizi Penn, Tamara Moore, Kerrie Douglas</i>	
Microcontroller Hands-On Lesson Plan and Analysis for Logic Gates in Computer Science 1	835
<i>Brandon Outtersen, Sheng-Jen Hsieh</i>	
Applying Just-In-Time Learning Strategies to Equip Students with Project Management Tools and Knowledge	843
<i>Nadhirah Binti Ayub Khan, Alex Qiang Chen, Qi Cao, Malcolm Yoke Hean Low</i>	

Repeated Measures Investigation of Self-Efficacy in Jonassen-Inspired Problem-Based Learning for Aerospace Engineering Students	853
<i>Sama Ghoreyshi, Andrew Olewnik, Scott Ferguson</i>	
WIP: “Not Engineering School” Where and How Engineering Undergraduates Obtain Labor Education	862
<i>Joseph Valle</i>	
Integrative AI Practices Across Disciplines: Innovations in Computer Science, Electrical Engineering, and Economics Education	868
<i>Xiaoguang Ma, Yanwei Wu, Xiaotong Liu, Jing Wang</i>	
WIP: A Pedagogy Study on Human Computer Interaction as a Necessary Foundation for Mobile Application Development	878
<i>Hongbo Zhou, Michelle Zhu, Liaquat Hossain</i>	
An Assessment Framework for Serious Games Focused on Cybersecurity	883
<i>Ilenia Fronza, Antonio Curci, Claudia Lorusso, Veronica Rossano, Shiva Saket Parida, Gennaro Iaccarino</i>	
Challenging the De-Valuing of Education Sciences: An Analysis of U.S. Engineering Education Ph.D. Programs	892
<i>Johannes Strobel, Emmanuel Sepulveda Guzman, Maartje Van den Bogaard</i>	
WIP: Protect: a Framework for Preserving Project-Based Learning Integrity in the AI Era	898
<i>Xiaoguang Ma, Yanwei Wu, Mehdi Roopaei, Jing Wang</i>	
Bridging Time Gaps in Computer-Supported Collaborative Learning: Quantifying the Effects of Time Zone Differences	903
<i>Han Kyul Kim, Aleyeh Roknaldin, Yiji Yoon, Stephen Lu</i>	
WIP: Exploring Students ‘ Self-Reflection Patterns in A Physics Course using LIWC Analysis	910
<i>Jiwon Lai Kim, Alfa Satya Putra, Muhsin Menekse</i>	
Epistemic Learning Through Work Placements: Boundary Crossing, and Tools as Boundary Objects	915
<i>Maartje Van den Bogaard, Johannes Strobel, Yezenia Marquez, America Rodriguez</i>	
Building Psychological Safety and Conflict Resolution Capacity in Faculty Teams	923
<i>Eva Andrijcic, Michelle Marincel Payne, Sriram Mohan, Julia Williams</i>	
WIP: Improving Individual Productivity Utilizing SCRUM-For-One	929
<i>Massood Towhidnejad, Zackary Hagerty-Posell</i>	
WIP: Literature Review on LLMs to Improve Code	934
<i>Sucharitha Nadendla, Sravya Karanam, Edward F. Gehringer</i>	
Toward Accessible Human-Data Interaction: Designing Auditory Displays for Informal Learning Environments	939
<i>Huaigu Li, Jon Bellona, Leslie Smith, Amy Bower, Jessica Roberts</i>	
WIP: tinyML Systems 101 New Course Curriculum in tiny Machine Learning	948
<i>Sercan Aygun</i>	
Scribble and Learn-A Leaner Centric Approach	953
<i>Helen. K. Joy, Manjunath R. Kounte, Sridevi R</i>	

Assessing the Impact of Undergraduate Global Experiences on Engineers' Career Outcomes: A Case Study of One University	960
<i>Lexy Arinze, Joe Tort, Kirsten Davis</i>	
Experiential Learning Through H-Bridge Motor Control Design: Integrating Industry Practices in Electric Circuits Classes	969
<i>Khalid Al-Olimat, Heath LeBlanc, Ahmed Ammar, M. Ajmal Khan</i>	
First Steps in Alternative Grading with an Introduction to Data Analytics Course	978
<i>Ben Clark</i>	
Accessibility and Accommodations for Students with Disabilities in STEM Higher Education: Synthesis of Research on Computing, Physics, and Engineering	987
<i>Morgan H. McKie, Stephanie J. Lunn</i>	
Improving Computing Education with 360-Degree Videos: A Tertiary Study	997
<i>Aziya Mehboob, Ilenia Fronza</i>	
WIP: A Scoping Literature Review on Survey Instruments Used to Examine STEM Graduate Students' Mental Health Experiences	1007
<i>Jake Czworka, Harish Vijayakumar, Similoluwa Ige, Taiwo Feyijimi, Sarah Jane Bork</i>	
WIP: Skill Extraction and Matching in Workforce Development: A Comparative Analyses of BERT and Generative Language Models to Inform the Design of an Interactive Digital Skills Platform	1012
<i>Samson Kwaku Nkrumah, Sara Morrissey Tucker, Fiona Boyle, Joseph Walsh</i>	
The Energy Literacy Spectrum: Understanding Students' Thoughts, Feelings, and Behaviors	1017
<i>Sakshi Solanki, Achal Duhoon, Desen Sevi Ozkan</i>	
Integrating Engineering Through Bio-Inspired Robots in K-6 Classrooms: A Case Study of a Goldfish Robot	1024
<i>Daniel Whitman, Deeksha Seth</i>	
WIP: Games Remote and Pockets Labs A New Educational Approach	1033
<i>Elio Sancristobal Ruiz, Félix García Loro, Clara Pérez Molina, Ricardo Martín, Rosario Gil Orteaor Manuel Castro</i>	
WIP: A Reference Implementation for Course Catalogues in the Erasmus Higher Education Context	1037
<i>Manuel Caeiro-Rodríguez, Fernando A. Mikic-Fonte, Martín Llamas-Nistal, Martín Liz-Domínguez Adrián Lugilde-López</i>	
WIP: Validating an Entrepreneurial Mindset (EM) Infused Teaching Practices Inventory (TPI): Insights from a Think-Aloud Protocol	1042
<i>Shukufe Rahman, Marcus V. Melo de Lyra, Benjamin Ahn, Bryant Hutson</i>	
WIP: Servingness and Graduate Engineering Education in Hispanic Serving Institutions	1047
<i>Mayra S. Artilles</i>	
WIP: Developing Agency Through a Rising Doctoral Institute	1052
<i>Jordan Peyton, Mayra Artilles, Juan M Cruz-Bohorquez, Holly Matusovich, Stepahnie G. Adams</i>	
WIP: Progressing from Micro-Credentialing to Micro-Recruiting: Connecting Employers with Ideally-Badged Learners via Last-Stage Invocation of GenAI	1057
<i>Paul Amoruso, Laurie O. Campbell, Ronald F. DeMara</i>	

Wip: Lessons Learned Using Genuine Projects to Motivate Students	1062
<i>Michael P. McGarry, Patrick Seeling</i>	
From Code to Crop: A Novel STEM-Based Approach Integrating Agriculture, Programming and Electronics	1067
<i>Jose G. Noronha Filho, Maicon A. Tibola, Dilmeire S. R. Vosgerau, Claudio Carvilhe, Carlos N. Silla</i>	
Impact of Prior Programming Experience on Firstyear Engineering Matlab Programming Skills	1076
<i>Sydney Cooper, Krista M. Kecskemety</i>	
Faculty Preparation Strategies: Empowering Computing Students to Achieve Technical Interview Success	1082
<i>Stephanie J. Lunn, Edward C. Dillon, Krystal L. Williams, Kevin Lemus, Christian Ruiz</i>	
Teaching Code Refactoring using LLMs	1091
<i>Anshul Khairnar, Aarya Rajaju, Edward F. Gehringer</i>	
Special Session: Integrating Learning Sciences into Engineering and Computing Education Research: A Practical Framework	1099
<i>HyeonJin Yoon, Guy Trainin</i>	
WIP: Early Engagement Strategies for Microelectronics in Engineering Education	1103
<i>Jason W. Morphew, Camille Johnson, Artre R. Turner, Kerrie A. Douglas</i>	
Tracing Code Quality Evolution: Insights from a Data Structures and Algorithms Course	1108
<i>Devanshi Prajapati, Ruben Acuña</i>	
Scaling Success: A Systematic Review of Peer Grading Strategies for Accuracy, Efficiency, and Learning in Contemporary Education	1117
<i>Uchswas Paul, Ananya Mantravadi, Jash Shah, Shail Shah, Sri Vaishnavi Mylavarapu, M Parvez Rashid Edward Gehringer</i>	
Characterizing Engineering Graduate Students' Longitudinal Stress Landscapes and Stressor Cascades	1126
<i>Boni F. Yraguen, Kyeonghun Jwa, Catherine G.P. Berdanier</i>	
Enhancing Student Understanding of Phase Diagrams Through Conceptual Writing-Based Exercises	1136
<i>Amir Saeidi, James P. Becker</i>	
RAG-PRISM: A Personalized, Rapid, and Immersive Skill Mastery Framework with Adaptive Retrieval-Augmented Tutoring	1142
<i>Gaurangi Raul, Yu-Zheng Lin, Karan Patel, Bono Po-Jen Shih, Matthew W. Redondo Banafsheh Saber Latibari, Jesus Pacheco, Soheil Salehi, Pratik Satam</i>	
Integrating Generative AI into Cybersecurity Education: A Study of OCR and Multimodal LLM-Assisted Instruction	1151
<i>Karan Patel, Yu-Zheng Lin, Gaurangi Raul, Bono Po-Jen Shih, Matthew W. Redondo Banafsheh Saber Latibari, Jesus Pacheco, Soheil Salehi, Pratik Satam</i>	
Development of a Digital Game to Stimulate Logical Reasoning in Individuals with Intellectual Disabilities (ID)	1160
<i>Ailime F. Rodrigues, Luiz C. Begosso, Luiz R. Begosso, Fernanda Mota, Darlise Nunes Ferreira Rosa Vicari, Regina Barwaldt</i>	

WIP: Cultivating Semiconductors and Microelectronics Interest in High School Students Using Hands-on Learning	1168
<i>Andrea Ramirez-Salgado, Pavlo Antonenko</i>	
Visualization of Logic Concepts Through Integrated Tools for Emergent Bilinguals	1173
<i>Shary Shimray, Sheng-Jen Hsieh</i>	
AI-Generated Essay Identification: A Machine Learning Approach and Fairness Analysis	1180
<i>Lingrui Sun, Yisheng Yang, Yang Song</i>	
Navigating Multi-Semester Service Learning in Software Engineering: Strategies for Success	1185
<i>Chad A. Williams, Stan Kurkovsky, Mikey Goldweber, Nathan Sommer</i>	
Learning from Chatbots: Main Themes in Recent Research	1194
<i>Rushabh Shah, Mahathi Kolishetty, Ed Gehringer</i>	
Combatting Quantitative Erasure of LGBTQIA+ Students Through an Investigation of Their Engineering Identity and Sense of Belonging	1200
<i>Ash Quadd, Justin Major, Allison Godwin</i>	
Exploring the Impact of ChatGPT on Early Information Systems Majors: Opportunities and Challenges in Learning to Program	1209
<i>Edward Dillon, Patricia Ordóñez, Uzma Hasan, Omobolanle Niyi Owoeye, Srushti Rajesh Dharmale</i>	
The Impact of a Career Counseling Program on Grade Nine Students in a Jamaican Secondary School	1218
<i>Balvin Thorpe, D'Andre Thorpe</i>	
Ageism in the Computer Science University Classroom: A Service Learning Case Study	1228
<i>Natalie Andrus, Alexa Smith, Hamid Tarashiyoun, Wei Lu Wang, Ihudiya Williams, Scott McCrickard</i>	
WIP: Engineering Education at Regional Campuses: A Systematic Review of Literature	1236
<i>Amanda S. Nault, Rachel L. Kajfez</i>	
WIP: Empowering Appalachian K-8 Educators to Teach Computational Thinking: A Culturally Responsive Research-Practice Partnership	1241
<i>Chulin Chen, Lynn L. Hodge</i>	
An Effective and Innovative Hands-On Approach for Teaching Introductory Concepts of Computer Programming, Electric Circuits, and Geiger Counter Topics for Middle and High School Students During a Short-Term Summer Camp	1246
<i>Stefan Andrei, Ganghee Jang, George Drouant, Cecily Heiner, Ethan Chinander, Kevin Pintong</i>	
WIP Paper on Generative AI Tutors for Operating Systems Instruction	1255
<i>John Hassell, Ahmed Ashraf Butt</i>	
Identifying the Potential Gap between Graduates' Preparation and the Professional Civil Engineering Consultant's Needs	1259
<i>Michael P. Venuto, Juan M. Cruz</i>	
WIP: Leveraging LLMs for Enforcing Design Principles in Student Code: Analysis of Prompting Strategies and RAG	1267
<i>Dhruv Kolhatkar, Soubhagya Akkena, Edward F. Gehringer</i>	
Evaluating LLM Engines for TA Chatbots	1272
<i>Shyamal Gandhi, Sai Santhosh Garlapati, Vinay Vobbilichetty, Edward F Gehringer</i>	

WIP: Using Hybrid Cognitive Interviews to Examine Validity of the Life Stressor Checklist to Study Racialized Stress Among Undergraduate Engineering Students	1281
<i>Mark O. Onyango, Vahidi Elahe, Thomas Kaitlyn Anne, Cross J. Kelly, Kirn Adam, Gaskins W. Whitney</i>	
WIP: Image Scaling Attack Simulation: A Measure of Stealth and Detectability	1285
<i>Devon A. Kelly, Sarah A. Flanery, Christiana Chamon</i>	
Enhancing Inquiry-Based Learning in Failure Analysis Through AI: A Case Study on Formative Assessment with OpenAI's GPT	1289
<i>Amir Saeidi</i>	
Improving Retention in a Fast-Paced Software Engineering Master's Degree for Career Changers Using a Skills Profiler	1296
<i>Paulo Fernandes, Christopher Stuetzle, Maria-Isabel Carnasciali, Torrey DiPalma</i>	
Analyzing Student Adoption of a Collaborative Live Coding Software in a Programming Course	1302
<i>Nicholas Caporusso</i>	
WIP - Conceptualizing Teacher Empathy in Engineering Education: Distinguishing Key Constructs and Contextualizing Definitions	1312
<i>Andres E. Nieto-Leal, Diana Bairaktarova, Juan D. Ortega-Álvarez, Susan Sajadi</i>	
WIP: Coding Neurodivergent - a Systematic Literature Review	1317
<i>Veronica Bramlett, Davis Flanders, Anna Manley</i>	
Assessing Student Attention Levels in the Classrooms Using Large Language Models	1322
<i>Medha Mohan Ambali Parambil, Kole Suzuki, Kazuyuki Murase, Salah Bouktif, Luqman Ali Hamad AlJassmi, Fady Alnajjar</i>	
WIP: Development of a Dual Feedback System for Engineering Mechanics	1331
<i>Benjamin E. Chaback, Jacob Grohs, James Lord, Olivia Ryan, Cassie Wallwey, David Dillard</i>	
WIP: Networking and Engagement of High School Students for Engineering Technology and Data Operation Careers	1336
<i>Benjamin E. Chaback, Amy Richardson, Michelle Klopfer, Christopher D. Russell, David Knight</i>	
Comparative Evaluation of Large Language Models for Test-Skeleton Generation	1341
<i>Subhang Boorlagadda, Nitya Naga Sai Atluri, Muhammet Mustafa Ölmez, Edward F. Gehringer</i>	
Enhancing Student Success in CS1: A Self-Selected Experience-Based Grouping Approach	1348
<i>April R. Crockett, Gerald C. Gannod, Neena Thota</i>	
Success Factors for Implementing Scrum in Academia	1357
<i>Alexandra Newcomb, Lynn Vonderhaar, Sarah Reynolds, Omar Ochoa, Massood Towhidnejad James Pembridge</i>	
Teaching VR Development for Undergraduate Computer Science Students With No Graphics Background	1366
<i>Lori A Rebenitsch, Lisa Rebenitsch</i>	
WIP: An Exploratory Sequential Mixed Methods Study on the Influence of Data Proficiency on Engineering Identity	1375
<i>Tanveer Syed, Godwyll Aikins, Catherine G. P. Berdanier, Kim-Doang Nguyen</i>	

Clicker-Free Motion-Controlled Mouse Using Arduino	1380
<i>Dheer Parikh, Michelle Tang, Jude Cheng, Puyuan Liu, Gyuseok L. Kim</i>	
The Researcher's Lens: How Engaging in Photovoice Prepares Us to Study Lower-SES, First-Generation Engineering Students	1387
<i>Elizabeth Strehl, Sarah Jane Bork, Aaron W. Johnson</i>	
WIP: Applying Self-Regulated Learning Principles in an Undergraduate Computer Science Seminar	1397
<i>Sophie Engle, Kelsey Urgo, Alark Joshi</i>	
An Exploratory Study of Relational Agency in Firstyear Open-Ended Engineering Design	1402
<i>Trevor Bennett, Corey Schimpf, Jutshi Agarwal</i>	
Visualizing Quadratic Attributes Using Projectile Simulator and Real Life Examples	1408
<i>Divya Kaushal, Sheng-Jen Hsieh</i>	
Learning Styles in Computer Science: A Cross-National Study of First-Year Students	1415
<i>Anabela Gomes, Nuno Gil Fonseca, Philip I.S. Lei, Cahn Tong Lam, Calana Chan, Geraldo Nhadumbuque Maria José Marcelino, Leonardo Soares, António José Mendes</i>	
WIP: Fostering Community Integration Through Family Creative Coding	1424
<i>Nina Bresnihan, Louise Caldwell, Mary O'Mahony, Richard Millwood, Glenn Strong</i>	
Factors Impacting Faculty Adoption of Project-Based Learning in Computing Education: A Survey	1429
<i>Ahmad D. Suleiman, Yiming Tang, Daqing Hou</i>	
Ethical Considerations in Artificial Intelligence: A Curricular Approach for STEM Disciplines	1438
<i>Qiping Zhang, Elizabeth Milonas, Duo Li</i>	
WIP: Structured AI Tutoring in Engineering Education	1446
<i>Alberto C. Cruz, Anjana Yatawara, Maruti Misha, Jianjun Wang</i>	
The Impact of a GenAI Integration on First-Year Engineering Students' Programming Outcomes	1451
<i>Udit K. Das, Makenzie S. Yates, Kristina A. Bloch, Lilly Hagan, Elisabeth L. Thomas, Gabe Gatos Alwin K. Rajkumar, Benarji Valavala, Seth Franco, Sudheer K. Divvela, Angela K. Thompson Campbell R. Bego</i>	
Tracking Shifts in Major and Concentration Combinations: Trends and Implications in a School of Electrical and Computer Engineering	1457
<i>Jacqueline Rohde, Lakshmi Raju, Elliot Moore</i>	
WIP - Developing a Rubric for GenAI Information Literacy in Programming	1467
<i>Makenzie S. Yates, Kristina A. Bloch, Elisabeth L. Thomas, Gabriel E. Gatsos, Udit K. Das Angela K. Thompson, Campbell R. Bego</i>	
Special Session: Cultivating Adaptable Engineers Through Interdisciplinary and Contextual Learning Strategies	1472
<i>Kassiopeia Smith</i>	
WIP: The Traininator: Making Machine Learning Accessible to Elementary School Students	1475
<i>Gordon Stein, Dun Na, Atefeh Behboudi, Tolulope Famaye, Cinamon Bailey, Golnaz Arastoopour Irgens</i>	
WIP: Minority Mentors' Learning and Awareness: Role Models for Undergraduate Engineering Students in a Research Program	1480
<i>Hilda Cecilia Contreras Aguirre, Stephanie Zackery, Luis Rodolfo Garcia Carrillo</i>	

WIP: Research Skills Development Among Minority Engineering Students Through a Research Mentored Program	1485
<i>Hilda Cecilia Contreras Aguirre, Stephanie Zackery, Luis Rodolfo Garcia Carrillo</i>	
A Simulation-Based Approach to Enhance Conflict Resolution Through Non-Violent Communication and Large Language Models in Teamwork	1490
<i>Miguel A. Feijoo-Garcia, Jorge A. Cristancho, James Dworkin, Alejandra J. Magana</i>	
WIP: Assessing the Use of GenAI to Foster Algorithmic Thinking in an Introductory Engineering Course	1499
<i>Juan D. Ortega-Alvarez, Campbell R. Bego, Andres Nieto Leal</i>	
WIP Active Learning of Foundational Software Engineering Skills Supported by GitHub Education	1504
<i>Alejandro Adorjan, Patricia De León, Martin Solari</i>	
Empowering Neurodivergent Student Voices in Engineering: A Participatory Action Approach to Inclusion and Retention	1509
<i>Elahe Vahidi, Elizabeth Pawley, Whitney Gaskins</i>	
Examining Perception Differences in Context Familiarity Between Students and Instructors in Computing Education: a Case Study on Introductory Database Concepts	1515
<i>Yuzhe Zhou, Paul Thomas, Tianyi Li</i>	
Using Participatory Narrative Portraiture to Understand Power Within Undergraduate Research Experiences	1523
<i>Lorna Treffert, Courtney Faber, Danielle Lewis</i>	
WIP: What Employers Want: A Data-Driven Analysis of Soft Skill Trends in Computer Science Job Postings (2012–2024)	1532
<i>Negin Yazdani Motlagh, Kritee Neupane, Lewis Tseng, Hsien-Yuan Hsu</i>	
A Devops Workflow for Courses Managing Course Material with Git and GitHub	1537
<i>Joel Coffman</i>	
How Graduate Engineering Students Learn AI: Competency Development, Conceptualizations, and Challenges	1546
<i>Rashmi W. Neelawathura, Malle R. Schilling, Samantha R. Brunhaver</i>	
Tangible Approaches to Improving Value Congruence Between Undergraduate Computer Science Students and Their Institutions	1554
<i>Jeremy Grifski, Emily Dringenberg</i>	
From Consumers to Creators: Critical Machine Learning (CML) Program for Middle School-Aged Students	1561
<i>Atefeh Behboudi, Golnaz Arastoopour Irgens, Ashley Markatos, Alicia C. Lane</i>	
How Do Undergraduate Engineering Students' Technical and Social Challenges in Online Learning Impact Their Engagement?	1568
<i>Rashmi W. Neelawathura, Li Tan, Samantha R. Brunhaver</i>	
WIP: Empowering Teachers and Engaging Students Through Flow-Based Music Programming in K-12 CS Education	1574
<i>Zifeng Liu, Fan Zhang, Alec Barron, Wanli Xing, Maya Israel, Victor Minces</i>	

Comparing SHAP and LIME Explanation Methods for Engineering Persistence ML Predictions	1579
<i>Xiaomei Wang, Alvin Tran, Christian Zuniga-Navarrete, Arinan Dourado, Luis Javier Segura Campbell R. Bego</i>	
An AI-Enhanced Systematic Review of Barriers to Student Engagement in Innovation Ecosystems	1588
<i>Sadan Kulturel-Konak, Abdullah Konak, Ada Leung</i>	
WIP: CourseForge: The Interactive Learning Management System to Detect and Visualize Course Bottlenecks	1595
<i>Nabila Ayman, Md Nour Hossain</i>	
The Use of a Prototype Environment for Programming Learning in Higher Education in the Mozambique Context	1600
<i>Geraldo Carlos Nhadumbuque, Anabela Gomes, Maria José Marcelino</i>	
WIP: What Does Mutuality Look Like? Comparing How MSIs and Non-MSIs Engage in S-STEM Partnerships to Serve Low-Income Engineering and Computing College Students	1609
<i>Sarah L. Rodriguez, Benjamin Chaback, Anya Work, Amy J. Richardson, David Reeping, David B. Knight</i>	
WIP: Fostering Ethical Judgment in Undergraduate Engineering Students Through Problem-Based Ethics Instruction	1613
<i>Opanuga Toluwalase, Heidi A. Diefes-Dux</i>	
Enhancing Social Engineering Education Through Roleplaying	1618
<i>Devang Patel, Madiha Fathima, Tatiana Ringenberg, Paul J. Thomas</i>	
WIP: Do Your Students Learn Multiple Programming Languages? How Do Computational Thinking Skills Help Them?	1627
<i>Deepti Tagare, Divya Chaudhary</i>	
WIP: Understanding Student Motivations in Innovation Ecosystems	1632
<i>Abdullah Konak, Sadan Kulturel-Konak</i>	
Longitudinal Study of Professional Virtue Development in Engineering & Computing	1637
<i>Stephen T. Frezza, Marita A. O'Brien</i>	
Exploring Institutional Ethnography in Engineering Education: Methods, Practice, & Possibilities	1646
<i>Victoria Bill, Emily Dringenberg</i>	
Interruption as a Framework for Unpacking the Experiences of Undergraduate Black Women in STEM: A Critical Case Study	1654
<i>Tamara Pearson, Justina Jackson, Kathaleena Edward Monds, Pamela Leggett-Robinson Monica Stephens</i>	
Developing Effective Attitudinal Character Indicators to Support Character Development	1663
<i>Stephen Frezza, Iryna Ashby, Marisa Exter</i>	
The Overlooked Role of 'Academic' Sense of Belonging: A Multi-Methods Study of Academic and Social Sense of Belonging Among Students in Globalized Engineering Graduate Education	1668
<i>Monica Perez Olmedo, Alex Struck Jannini, Wilson Macias, Eunsil Lee</i>	
WIP: A Preliminary Study on the Retention Trends of Regional Campus Engineering Students	1677
<i>Sherri Youssef, Rachel Louis Kajfez</i>	

WIP: Enhancing Design Patterns Learning Through Gamification	1682
<i>Luiz Carlos Begosso, Luiz Ricardo Begosso, Regina Barwaldt, Vitor Hugo Camoleze Delantonia</i>	
<i>Uryel Jo de Lucca Araujo de Oliveira, Ailime F. Rodrigues Federal</i>	
Impacts of Professional Development on Knowledge for Teaching Middle School Computer Science	1687
<i>Garrett Berliner, Jennifer Parham-Mocello, Margaret Niess</i>	
WIP: Examining Geospatial Differences in the Gender Wage Gap in STEM	1697
<i>Akshay Bansal, Cam Kormyolo, Mahdis Tajdari, Jharana Sapkota, Mohammed Farghally</i>	
Guidelines for the Development of Digital Educational Game Software Based on Vygotsky's	
Socio-Interactionist Theory	1702
<i>Silvia Dotta, Diego Marques, Juliana Braga, Itana Stiubiener</i>	
WIP: Generative Artificial Intelligence in Undergraduate Software Engineering Education	1709
<i>Jeffrey Hemmes, Richard Blumenthal</i>	
Empathy, Humility, and the Computer Engineer – in an Australian Context	1714
<i>Jacob Elmasry, Johannes Strobel, Tom Goldfinch, Benjy Marks, Ali Hadigheh</i>	
WIP: Integrating Accessible Learning Labs: An Exploration of Faculty Experiences	1722
<i>Kayla D. Taylor, Joshua L. Radjavitch, Laxima Niure Kandel</i>	
WIP: Comparing the Impact of Learning Strategy Interventions in Varied Teaching Contexts	1727
<i>Alex Phan, Huihui Qi, Minju Kim, Marko V. Lubarda, Curt Schurgers</i>	
WIP: Experiment Exploration in Computer Organization - Design a Computer for Running Software	1732
<i>Shanshan Li, Ninghan Zheng, Yuchao Gao, Xiaojun Wu, Weidong Liu</i>	
WIP: Aligning Computing Students' Expectations, Training, and Industry Needs	1737
<i>David Lopez, Josep Fernandez, Hugo Aranda-Sanchez</i>	
WIP: Improving Assessment and Feedback with Interactive Exercises	1742
<i>Jarkko Hurme, Päivi Porras, Henry Lähteenmäki</i>	
Automated Student Engagement Detection Using Hybrid Deep Learning and Machine Learning	
Techniques	1747
<i>Sherif E. Abdelhamid, Mona Aly</i>	
WIP: Artificial Intelligence in Fashion and Textile, Rethinking Education for Emerging Industry Needs	1756
<i>Rosa M. Vasconcelos, Emilia Araújo, Inês do Amaral, Inês Castro</i>	
WIP Second-Year Engineering Student Perceptions of Workload and Its Influence on Conceptual	
Understanding	1761
<i>Marin J. Fisher</i>	
Enhancing Technical Skills and Interest of K-12 Students in Construction Engineering Using Mixed	
Reality Learning Environment	1766
<i>Mariam Tomori, Joshua Ofori, Omobolanle Ogunseiju</i>	
WIP: Designing Differently: An Exploration of How Community Cultural Wealth Shapes Student	
Design Experiences	1775
<i>Jennifer S. Brown, Dina Verdín, Julie P. Martin</i>	

Identification of the Critical Knowledge Areas for Advancing Human-Wearable Robots Interactions: A Delphi Study	1780
<i>Joshua Nsiah Addo Ofori, Mariam Tomori, Omobolanle Ogunseiju, Chuma Nnaji</i>	
Exoskeleton Adoption in Construction: How Do Industry Experts Say We Can Prepare the Future Workforce to Advance Exoskeleton Solutions?	1787
<i>Joshua Ofori Nsiah Addo, Mariam Tomori, Omobolanle Ogunseiju</i>	
WIP: PicPrompt - A Novel Social Prompt Engineering Game Based Tool for Informal Learning in K-12	1795
<i>Johnny Ngo, Panhapiseth Lim, Griffin Kopp, Omar Beg, Saniya Movahed, Priyanka Kumar</i>	
Systematized Literature Review of “Work-Life Balance” and “Women” in Engineering	1800
<i>Laura Melissa Cruz Castro, Sarah Jayasekaran</i>	
WIP: Understanding and Addressing Barriers to Industry Engagement in Undergraduate Engineering Programs	1806
<i>Brahim Medjahed, John Cristiano, Sebastian Dziallas, Jean Huang, Michelle Edith Jarvie-Eggart, Stephanos Matsumoto, Chris Sharp, Rabih Younes</i>	
Empowering Disruptive Professor for a Disruptive University	1811
<i>Claudio R Brito, Melany M Ciampi</i>	
WIP: Motivating Calculus for Computer Science Majors	1816
<i>Rajendra K. Raj, Aaron Deever, Shari Plantz-Masters, Douglas Hart, Rahul Simha</i>	
Developing and Assessing a Customizable Educational Game	1821
<i>Donovan C. Benson, Jinghua Zhang</i>	
The Fascinating New Classroom Styles of Twenty Twenties and On... ..	1827
<i>Melany M Ciampi, Claudio R Brito</i>	
WIP: Design and Usability of an Interactive Educational Application for Teaching Undergraduate Sedimentology	1832
<i>Syeda Fizza Ali, Anna Stepanova, Daniel S. Bahng, Utsav Dabhi, Divij Bajaj, Juan C. Laya, Carlos A. Alvarez Zarikian, Tracy Hammond, Saira Anwar</i>	
ToP-CK: Technological Pedagogical Content Knowledge and Adaptive Feedback Integrated Robot Path Planning	1837
<i>Tingjun Lei, Timothy Sellers, Chaomin Luo, Lin Gong, Zhuming Bi, Jiawen Wang</i>	
WIP: Aligning Undergraduate Curricula with Industry Needs: Detailing the Method and Technique of a Q Study of Perspectives and Competency Expectations of Key Stakeholders	1846
<i>Taiwo Raphael Feyijimi, Sarah Jane Bork</i>	
A Checklist-Based Intervention for Improved Comprehension of Design Concepts in CS Education	1851
<i>Rupinder Kaur, Muhammad Zubair Malik, Maninder Singh</i>	
WIP: Montessori-Inspired Learning in Undergraduate Computer Science Education	1860
<i>Raul Alejandro Vargas-Acosta, Omar Ochoa</i>	
Using Scrum to Improve Student Teamwork in a Project-Based Hybrid Learning Setting	1865
<i>Essa Imhmed, Edgar Ceh-Varela, Mustafa Elfituri</i>	
Student Competency Assessment and Presentation Methods Based on Algorithm Courses	1873
<i>Yingqi Zhang, Ninghan Zheng, Shanshan Li, Weidong Liu</i>	

Navigating Teamwork Challenges in Project-Based Learning	1882
<i>Brainerd Prince, Aashana Baldi, Aparajita Jaiswal, Muna Sapkota</i>	
WIP: Multi-Agent Artificial Intelligence Model to Enhance Self-Regulated Learning and Conceptual Understanding in Computer Science Education	1890
<i>Jeheo Ryoo, Michael Pin-Chuan Lin, Sahil Rai, Wenhao He, Seong Min Park, Marco Ho</i>	
WIP: the Impact of Activeness on the Student Competencies and Curriculum Design of CS	1895
<i>Ninghan Zheng, Yingqi Zhang, Yuchao Gao, Shanshan Li, Xiaojun Wu, Weidong Liu</i>	
Advancing Robot Local Navigation Through Vector Field Histograms Using a Hybrid Learning Approach	1900
<i>Timothy Sellers, Tingjun Lei, Jiawen Wang, Umar Iqbal, Lantao Liu, Chaomin Luo</i>	
Xiaohang: Research on the Construction and Application of Educational Intelligent Agents Based on Large Language Models	1909
<i>Ying Li, Xiaozhou Zhang, Tongyu Zhu, Haifeng Gao, Guoliang Zhang, Guopeng Wang</i>	
WIP: Using Active Learning Methods for Ethical Reflection in Engineering Education on Emerging Technologies: the Example of Electric Aviation	1914
<i>Jennifer Leijon, Olof Lindahl</i>	
FULL: Enhancing K-12 Teachers' AI Competencies Through a Professional Development Program	1919
<i>Lechen Zhang, Linda Mannila, Yuki Nagae, Jalal Nouri</i>	
Research on Personalized Cognitive Graph Based on Large Language Models (LLM) for Education	1928
<i>Ying Li, Yiming Gai, Leilei Sun, Xingyu Wang, Chaoxu Wang, Xuefei Huang</i>	
WIP: Examining the Relationship Between Student's Emotional Engagement and Objective Emotion Metrics in Synchronous Hybrid Learning Environments	1933
<i>Satori Hachisuka, Akiko Nakazawa, Hanako Itsubo, Naomi Iwazawa, Toru Fujimoto, Yuhei Yamauchi</i>	
Bridging Theory and Practice: Transforming STEM Keynote Presentations Through Experiential and Musical Engagement	1938
<i>Hortense Gerardo, Victor Hugo Mincez</i>	
WIP Laboratorio Impacto: Fostering Culturally Relevant Stem Informal Learning	1943
<i>Awilda Rodríguez Carrión, Aikaterini P. Kyprioti, Deborah A. Trytten</i>	
Increasing Care, Community and Productivity Through a Faculty Support Program	1948
<i>Jude Fogarty, Kristen R. Moore</i>	
Making and Analyzing Decisions Based on Ethical Principles: Core Competencies Required	1956
<i>Fatemeh Pariafsai, Sadjad Pariafsai, Manish Kumar Dixit, Shirley Nelly Tandoh, Stephen Mark Caffey</i>	
AI-Augmented Medical Education: Transforming ICU Mortality * Length of Stay Prediction	1961
<i>Ameya Kokate, Twinkle Paraye, Sushanth Manakhari, Ajinkya Jadhav</i>	
WIP: Robots in Synch, Engineers in Harmony: A Synchronizing Firefly Robot Kit for Enhancing Student Engagement Through Positive, Community-Centered Emotions	1967
<i>Derrick W. Yeo, Krystelle Fernandez, Hadi H. Soweidan</i>	
Agile Game Production Instruction: Integrating Agile Methodologies with Project-Based Learning in Game Development Education	1972
<i>Víctor Manuel Pérez Colado, Aedan Soellaart, Chris Hart, Adam Palmquist</i>	

Implementing a Praxis of Change: A Comparative Case Study on Interactive Methodologies and the Instruction of Engineering Ethics	1980
<i>Hortense Gerardo, Alessandro Marinoni, Raymond De Callafon</i>	
Successful Teaching Strategies in Virtual World Education for Engineering and Computing	1985
<i>Arghavan Nova Ebrahimi, Mary Lou Maher, Harini Ramaprasad</i>	
Exploring Students' Free Body Diagrams on Truss Structures Using Different Modalities in a Visuo-Haptic Simulation	1994
<i>Hector E. Will, Alejandra J. Magana, Lynn A. Bryan</i>	
Using an Early-Term Design Challenge to Jump-Start Peer Interactions in First-Year Engineering Courses	2002
<i>Abhimanyu Ghosh, Jocelyn Hamann, Kevin Dietsche, Brenda Puck</i>	
Reflective Homework as a Learning Tool: Evidence from Comparing Thirteen Years of Dual vs. Single Submission	2010
<i>Madhur Dixit, Kavya Lalbahadur Joshi, Kaveri Bhalchandra Konde, Edward F. Gehringer</i>	
Teaching Programming in the Age of AI: Transforming Pedagogy Amidst Code-Generating Technologies	2016
<i>Asad Azemi</i>	
Data-Driven Team Assignment in Software Engineering Education: A GitHub-Informed, Difficulty-Aware Approach	2026
<i>Ruochi Li, Jialin Cui, Ed Gehringer</i>	
WIP: Profiling Digital Readiness Among Undergraduates: A Person-Centered Approach	2035
<i>Thien Nguyen, Alexander J. Helberg</i>	
Evaluating the Efficacy of Using LLMs in Assessing Software Quality Assurance Projects	2040
<i>Timothy Elvira, Omar Ochoa, Juan Ortiz Couder</i>	
Pedagogical Strategies for Teaching Big Data: Why, What, and How?	2045
<i>Raja Sooriamurthi</i>	
WIP: EvolveMoralMaze: Introducing Middle School Students to AI Ethics	2053
<i>Priyanka Kumar, Anupama Kumari, Panhapiseth Lim, Alejandro Sotelo, Saniya Movahed Mohsen Dorodchi</i>	
Leveraging Learning Management Systems for Academic Risk Prediction Using Machine Learning: A Computer Science and Engineering Perspective	2058
<i>Daniel Getty, Mason Turner, Matthew Nickols, Halil Bisgin</i>	
A Literature Review on Engineering and Social Entrepreneurship Competencies for Developing Responsible and Entrepreneurial Engineering Workforce	2064
<i>Arsalan Ashraf, Aileen Huang-Saad, Dayoung Kim</i>	
WIP: Data-Driven Adaptive Curriculum-Personalizing Academic Pathways for Enhanced Engineering Student Success	2073
<i>David Mike-Ewewie, Panhapiseth Lim, Alejandro Sotelo, Priyanka Kumar</i>	
The Global Landscape of Research on AI Literacy: A Bibliometric Analysis of Trends, Collaborations, and Emerging Themes	2078
<i>Jeya Amantha Kumar</i>	

A Hybrid Learning Approach to Multi-Target Navigation in Robotics Education	2088
<i>Tingjun Lei, Timothy Sellers, Umar Iqbal, Jiawen Wang, Chaomin Luo</i>	
Human-in-the-Loop Systems for Adaptive Learning Using Generative AI	2097
<i>Bhavishya Tarun, Haoze Du, Dinesh Kannan, Edward F. Gehringer</i>	
WIP: Do Metadiscursive Riffs Harmonize Lecture Delivery?	2104
<i>Chang Kyoung Choi, Aneet D Narendranath, Radheshyam Tewari</i>	
Understanding Students' Perceptions of Human Dispositions in Computing Education	2108
<i>Teresa Pereira, John Impagliazzo</i>	
Special Session: Practice-Based Research for Engineering Educators: Reflective Practices in Curriculum Design	2119
<i>Cristian Vargas-Ordóñez</i>	
Game on! Enhancing Learner Engagement in Large Computer Science Classes Using Gamification	2122
<i>Usman Naeem, Vindya Wijeratne, Habiba Akter, Md Hasanuzzaman Sagor, Laurissa Tokarchuk, Na Yao</i>	
Broadening Participation in CS Research with Scalable Undergraduate Research Mini-Projects	2130
<i>Bridget Agyare, Manooshree Patel, Alicia Matsumoto, Gireeja Ranade</i>	
A Two-Quarter Initiative in Co-Designed Programming Courses for High School Students	2139
<i>Tianyi Li, Victoria L. Lowell</i>	
WIP: Establishing a Coding Framework for Research on Moral Narratives of Engineering Practitioners	2149
<i>Bailey K. McOwen, Marie Paretti, Dayoung Kim</i>	
Categorizing and Comparing Students' Interactions in eTextbooks	2154
<i>Jharana Sapkota, Mohammed Farghally, Mostafa Mohammed, Clifford A. Shaffer</i>	
WIP: Fostering Effective Teamwork in Undergraduate Research Based Course	2163
<i>Priyanka Kumar, Panhapiseth Lim, Saniya Movahed, Omar Beg</i>	
WIP: Evaluating the Capabilities of GPT Applications in Solving Introductory-Level Algorithm Problems	2168
<i>Xiaojun Wu, Shanshan Li, Ninghan Zheng, Yuchao Gao</i>	
A Study and Implementation of Customizable Optical Mark Recognition Sheets for Assessments	2173
<i>Chengcheng Han, Arun Krishna K, Pranav V, Manuel Castro, Sathiamoorthy Manoharan</i>	
<i>Babulakshmanan Ramachandran, Elio Sancristobal, Ulrich Speidel, M G Thushara, Xinfeng Ye</i>	
WIP: ERTE Protocol: Promoting Creative Problem Solving Skills in Undergraduate Engineering Students	2182
<i>Andrew Jung, Jinsook Park, Kiwon Sohn</i>	
Integrating Errorless and Scaffolding Learning Theories in a Generative Artificial Intelligence Supported Virtual Learning Environment: Demonstration and Validation	2187
<i>Masood M Khan, Ryan Liebrechts, Chris Ford</i>	
Engaged Student Learning Through Hands-on IoT: A Special Topics Course on IoT - Devices and Communication	2196
<i>Mehrube Mehrubeoglu, Lifford McLauchlan, David Hicks</i>	

WIP: Enhancing Computer Programming Courses with Hardware and Simulation Projects	2205
<i>Asad Azemi</i>	
WIP: Using Freelisting as a Self-Assessment Method for Freshmen Mechanical Engineering Students	2210
<i>Cristian Vargas-Ordóñez, Srikanth Janga</i>	
AI-Powered Personalized Hindi Pronunciation Tutor for Enabling Engineering Students to Effectively Communicate Technical Concepts	2214
<i>Satvik Bajpai, Nimrat Kaur, Arnav Rustagi, Brainerd Prince, Siddharth Siddharth</i>	
Assessing the Efficacy of Teaching Computational Thinking Through the Instructional Method of Academic Research	2223
<i>Deepan Raj Prabakar Muthirayan, Raghav Awasty, Divyannsh Pincha, Shikhray Singh, Anvita Ghosh Brainerd Prince</i>	
Leveraging LLM/GAI Agents for Authentic Assessment in Competency-Based Online STEM Programs	2229
<i>Yanzhen Qu, Howard Evans, Noura Abbas, Richard Cai, Mazen Haj-Hussein, Janet Durgin Anastasia Biggs, Daniel Letort</i>	
WIP: AI Tutor for Assessing and Training Engineering Students in Reading Comprehension	2237
<i>Shreya Khanna, Armaan Raisinghani, Niksh Hiremath, Shreyas Ramachandran, Brainerd Prince, Siddharth</i>	
Enhancing Public Speaking Skills in Engineering Students Through AI	2242
<i>Amol Harsh, Brainerd Prince, Siddharth Siddharth, Deepan Raj Prabakar Muthirayan, Kabir S Bhalla Esraaj Sarkar Gupta, Siddharth Sahu</i>	
The Dissonance in the Use of Bloom's Taxonomy in Designing Curricula of Engineering Courses	2251
<i>Brainerd Prince, Lakshit Tyagi, Preesha Katial, Aadi Jain</i>	
Building a Positive Perception of Biology in Undergraduate Engineering Students	2261
<i>Prashanth Suresh Kumar, Harshpreet Kaur, Ishrat Ayesha Bombaywala, Manaasve Vij, Arya C Vachhani Brainerd Prince</i>	
WIP: Cognition-Aware RAG for Video-Based Learning Support	2269
<i>Xiaonan Wang, Hidenari Kiyomitsu, Asako Ohno</i>	
WIP:Strategic Gamification: Enhancing STEM Curriculum Through Game-Based Learning	2274
<i>Mehdi Roopaei, Caitlin Johnson</i>	
Scaffolding the Problem-Solving Process for Introductory Computing Students	2279
<i>Ashish Deepak Dandekar, Nitya Lakshmanan, Daren Ler, Adi Yoga Sidi Prabawa, Sanka Rasnayaka</i>	
Design Fixation in Cross-Cultural Education: Challenges in Overcoming Fixed Thinking in a Global Design -Thinking Program	2284
<i>Andrea Goncher, Gloria Kim, Adurey Dehoog</i>	
WIP: Leveraging Blockchain for Secure and Verifiable Micro-Credentialing in Engineering Education	2292
<i>Christiana Chamon, Leyla Nazhandali, Vinod Lohani, Dayoung Kim</i>	
WIP: Bridging the Cybersecurity Skills Gap through an Innovative Undergraduate Certificate Program	2296
<i>Doug Jacobson</i>	
Empowering Undergraduate Research through an Entrepreneurial Mindset Framework	2300
<i>Maysam Nezafati, Irene Reizman, Mary Lauren Benton, Michelle K. Marincel Payne, Jonathan Rylander Liping Liu</i>	

Integrating a Customized AI Chatbot in Database Design and Programming Course	2308
<i>Shamima Mithun, Rajagopal Sankaranarayanan</i>	
WIP: Introducing Automata Theory in Basic Education Through Problem-Based Learning	2317
<i>Júlia Veiga, Simone André da Costa Cavalheiro, Luciana Foss</i>	
Bringing More Girls to STEM: A Systematic Review of Brazilian Initiatives	2322
<i>Mariana P. Santos, Isabela M. Montingelli, Andreia Malucelli, Sheila Reinehr, Carlos N. Silla</i>	
Lightweight LLM for Accurate & Accessible Automated Course Support in Student Forums	2330
<i>Jason L Weber, Ulises Maldonado, Alessio Diaz Cama, Justin Tian Jin Chen, Agustín Herlindo Angulo Barbara Martinez Neda, Jennifer Wong-Ma, Sergio Gago-Masague</i>	
Mental Health Needs of International Students: Insights for Digital Solutions	2338
<i>Alex Gurung, Chandra Kala Rai, HousamEldin A. Mohamed, Charlotte Tang</i>	
Evaluating the Impact of Curriculum Redesign on Structural Complexity and Student Progression in First-Year Engineering Programs	2347
<i>Sanjivan Manoharan, Lindsay Corneal, Shabbir Choudhuri</i>	
Adoption, Usage, and Perceptions of LLM-Generated Feedback in Computer Science Education: A Cross-Cultural Study of Students and Academics	2354
<i>Eyman Alyahyan, Mireilla Bikanga Ada, Jake Lever</i>	
Friendelligent: A Collaborative Synchronized Game-Based Platform for AI Education and Autonomous Navigation Curriculum	2363
<i>Raul Alcantara Castillo, Tasneem Burghleh, Deem Alfozan, Randi Williams, Sharifa Alghowinem Cynthia Breazeal</i>	
The AI Policy Module: Developing Computer Science Student Competency in AI Ethics and Policy	2371
<i>James Weichert, Daniel Dunlap, Mohammed Farghally, Hoda Eldardiry</i>	
WIP: Enhancing Employability Through Industry Engagement: A Work in Progress Report on an Advisory Council	2380
<i>Ferran Badia, Alvaro De Gracia, Francesc Giné, Josep Lluís Lérida, Margarita Moltó-Aribau, Magda Valls</i>	
Decoding AI Impact: Longitudinal Analysis of Code Submissions in Programming MOOCs	2385
<i>Leo Leppänen, Juho Leinonen, Arto Hellas, Erkki Kaila, Linda Mannila</i>	
Early Introduction of Electrical and Computer Engineers to Design Problems: A Study on Design Thinking and Learning Outcomes	2392
<i>Mohamed A. S. Zaghloul, Heather M. Phillips, Amr M. Hassan</i>	
WIP Bridging the Gap: Faculty Perspectives on Microlearning Implementation in Engineering and Computing Education	2399
<i>Farhan Sadique, Suman Saha, Mahfuza Farooque, Susan Yelich Biniecki</i>	
(WIP) Developing a Generative AI Literacy Module for Engineering Graduate Teaching Assistants: A Model for Engineering Education	2404
<i>Ibukun Osunbunmi, Bono Po-Jen Shih, Stephanie Cutler, Carlos Perez</i>	
WIP: COMPASS - A Gamified Visual Framework for Competency Tracking in Computing Education	2409
<i>Jamie Sundance McDonald, Ross McLean, John NA Brown</i>	

Concept of a Digital Battery Laboratory for Academic Training of Future Battery Experts	2414
<i>Heiko Fechtner, Alexander Popp, Utz Spaeth, Benedikt Schmuelling</i>	
AI Chatbots vs. Traditional Search: A Comparative Study on Student Information Retrieval	2419
<i>Leonardo Pasquarelli, Charles Koutchme, Arto Hellas</i>	
Mitigating Exam Barriers for Neurodivergent Students: A Study on Sensory Adaptations in Computing Assessments	2427
<i>Aidan McGowan, Neil Anderson, Christopher Smith</i>	
WIP: Evaluating a Survey Tool to Measure the Longitudinal Development of Student's Perception and Confidence in Using Advanced Data Skills	2432
<i>Ophelia Winslett, Laura Christian, Carmen Thiemann, Todd Fernandez</i>	
A Scoping Review of Multidisciplinary and Interdisciplinary Engineering in Higher Education: Unanswered Questions and Future Directions	2437
<i>Zane Reynolds, Shawn Jordan</i>	
Long-Term Impacts of K-12 AI Education Interventions on Social Media Mechanisms	2446
<i>Henriikka Vartiainen, Juho Kahila, Nicolas Pope, Sonsoles López-Pernas, Teemu Valtonen, Matti Tedre</i>	
Comparing Feedback Practices in Higher Education: Perspectives from Academics and Students in the UK and Saudi Arabia	2455
<i>Eyman Alyahyan, Mireilla Bikanga Ada, Jake Lever</i>	
Recruiting and Developing Faculty Mentors to Improve STEM Retention and Success	2464
<i>David Joiner, Patricia Morreale, Sarah Hug, Derrick Swinton, Feng Qi, Kim Spaccarotella, Dina Rosen Nancy Amador</i>	
A Study on Mathematical Problem-Solving Skills for Computer Science Undergraduate Students	2473
<i>Thitima Srivatanakul, Virginia L. Thompson, Yonghong L. McDowell, Philip Parzygnat</i>	
WIP: A Pedagogical Prompt Engineering Framework for LLM-Based Feedback in Higher Education (PPE-LLM)	2481
<i>Eyman Alyahyan, Mireilla Bikanga Ada, Jake Lever</i>	
A Narrative Pedagogy to Teach Biology to Engineering Students	2486
<i>Prashanth Suresh Kumar, Neelam Sarmah, Aarav Mathur, Sana Arora, Maninder Kaur, Brainerd Prince</i>	
Using Alphafold to Deepen Understanding of Protein Folding and Big Data in an Engineering Cell and Molecular Physiology Course	2495
<i>Laura Christian, Ophelia Winslett, Carmen Thiemann, Todd Fernandez</i>	
Designing a Survey to Evaluate a Value Sensitive Design Intervention on Healthcare Disparities in a Core Biomedical Engineering Course	2502
<i>Marianne Al Haj, Maysam Nezafati</i>	
Investigating Students' Programming Plan Knowledge with Time-Constrained Code Recall Tasks	2511
<i>Ava Heinonen, Reetta Puska, Francisco Castro, Juha Sorva, Juho Leinonen, Arto Hellas</i>	
“ChatGPT Should be Used as a Tool, But Not Mistaken for a Crutch”: Engineering Students' Ethical Perspectives After Using GenAI in an Introductory Course	2520
<i>Campbell R. Bego, Deborah A. Trytten, Joshua C. Nwokeji</i>	

WIP: Explainable AI is not Self-Explainable: Findings from Design-Based K-12 AI Education	2529
<i>Nicolas Pope, Maria Kuusmin, Eetu Arkko, Henriikka Vartiainen, Juho Kahila, Matti Tedre</i>	
WIP: Retaining Future Innovators: Strategies to Foster Resilience & Persistence in Robotics & AI	2534
<i>Rachel Burcin, Sergio Sedas-Gersey</i>	
WIP: Building on Teacher Perceptions to Help Bring AI to K – 12 Classrooms	2538
<i>Joanne Barrett, Diego Zapata-Rivera, Blair Lehman, Jesse R. Sparks, Jeffrey Ginger, Reginald M. Gooch Maya Israel</i>	
WIP: Design Activity Engagement of Women Engineering Students in Capstone Courses	2543
<i>Amelia Slater, James Huff</i>	
Developing Written Communication Skills in Engineering Education Using Automated Short Answer Grading	2548
<i>Jan-Mikael Rybicki, Sami Sarsa, Juho Leinonen, Arto Hellas</i>	
An Updated View of Conversational Agents in Engineering Education: A Scoping Review	2557
<i>Manjesh Mishra, Luciana Debs, Kimberly Grau Talley</i>	
WIP: Undergraduate Research Platforms for Promoting ECE Career-Connected Learning to High School Juniors and Seniors	2565
<i>Wookwon Lee</i>	
WIP: Belonging in Engineering? Grouping Strategy Development	2570
<i>Kristin L. Schaefer</i>	
A Comparative State-Level Analysis of Computer Science Teacher Capacity in Georgia and Wisconsin Public High Schools	2575
<i>Sujeeth Goud Ramagoni, Christian Marowski, Aaja Christie, Bryan Cox, Dennis Brylow, Anu G. Bourgeois</i>	
WIP: Using Comparative Industry Cases to Teach About Challenges in the Electrification of Transportation	2584
<i>Jennifer Leijon, Olof Lindahl</i>	
WIP: Navigating Reintegration Challenges After a Research Abroad Experience	2589
WIP: Exploring the Value of a Debugging Cheat Sheet and Mini Lecture in Improving Undergraduate Debugging Skills and Mindset	2594
<i>Andrew Ash, John Hu</i>	
WIP: The Epistemic Practices Engineering Students Used to Solve an Open-Ended Problem	2599
<i>Maurison Agba, Olivia Schupbach, Jacob Brink, Courtney Faber</i>	
WIP: An RC Circuit Model for Student Attendance: A System for Encouraging Continuous Engagement	2604
<i>Anson Trapani, Victoria Chin, Manav Shah, Christiana Chamon, Leyla Nazhandali</i>	
WIP: Assessing Quantum Competency Development at Two Land-Grant R1 Institutions	2609
<i>Syed Hassan Tanvir, Gloria J Kim, Ulya Karpuzcu</i>	
Research Experience for Undergraduates for Inclusion of African American and Hispanic Students in Computer Science Majors: A Literature Mapping	2614
<i>Maristela Holanda, Suxia Cui, Dilma Da Silva</i>	

WIP: Development of a Qualitative Codebook to Study Reflective Depth in Engineering Courses	2622
<i>Campbell J. McColley, Mohammed Alrizqi, Alexandra Werth</i>	
WIP: Faculty Mentoring Experiences in an Evolving NSF S-Stem Project	2627
<i>Debarati Basu, Sydney A. Cash, Omar Ochoa</i>	
iAthena: Research Challenges in the Use of Persuasive Technologies to Monitor People with Depressive Disorder	2632
<i>Fernanda P. Mota, Daniel Capua, Adriana Da S. Pinto, Regina Barwaldt, Adenauer C. Yamin</i>	
WIP: Microcontrollers or Python: How Different Tools in a Common Engineering Curriculum Shape Learning and Perceptions	2641
<i>Artre R. Turner, Jason W. Morphew, Melissa A. Dyehouse, Kerrie A. Douglas</i>	
Enhancing Engagement and Learning in IT Courses: A Pedagogical Approach to Gamification	2646
<i>Anum Masood</i>	
WIP: Evaluating the Effects of Active-Learning Implementation in a Foundational Engineering Course	2655
<i>Cathy Ishikawa, Praveen Meduri, Sergio Aguilar-Rudemetkin, Mohammed E. Eltayeb, Milica Markovic</i>	
Designing Laboratory Courses for Undergraduate Students in Materials Science and Engineering - a Systematic Review	2660
<i>Anurag Srivastava, Bilal Mansoor, Saira Anwar</i>	
WIP: Using Cases and a Change Management Framework to Teach About Implementing New Ways of Working in the Electrification of Transportation	2667
<i>Olof Lindahl, Jennifer Leijon</i>	
Developing and Assessing an Esports-Infused Course Module	2672
<i>Marty A. Kornegay, Jinghua Zhang, Mustafa Atay</i>	
Examining the Prevalence of Design Philosophies in Engineering Education	2677
<i>Nathan M. Hicks, Corbin Edmonds, Emma Laymon</i>	
Beyond the Resume: Identifying Key Traits and Training Investments of Successful Undergraduate Mentors for STEM Education	2685
<i>Rory Petersen, Kylee Schroeder-Howard, Glen Hordemann, Rebecca Schlegel</i>	
WIP: Lifelong Learning in Electrical Engineering Education Using a Stakeholder Approach for Electrified Aviation	2694
<i>Olof Lindahl, Jennifer Leijon</i>	
Analysis and Evaluation of Gemini for Question Generation in Two Engineering Courses	2699
<i>Pedro Manuel Moreno-Marcos, Javier Gil Santiuste, Pedro J. Muñoz-Merino, Carlos Alario-Hoyos Carlos Delgado Kloos</i>	
Student Interest and Choice of STEM Majors: A Systematic Review of Contributing Factors	2707
<i>Syeda Fizza Ali, Saira Anwar</i>	
WIP: Supporting Industrial Engineering Students' Learning in Capstone Engineering Design Course	2716
<i>Syed Ahmad Hemi Syed Hassan, Craig Allen Zehrung, Aaron Ramsey, Prathyush Dinesh Kothari Maxell Lumbea, Khairiyah Mohd-Yusof</i>	

(WIP) Bridging the Industry-Academia Gap: Assessing the Need for AI Tools in Technical Interview Preparation and Workforce Readiness	2721
<i>Oluwagbeminiyi Johnson, Marlon Mejias, Luce-Melissa Kouaho</i>	
WIP: Augmenting User Stories Writing with GenAI in Students' Software Engineering Projects	2726
<i>Mervat Abu-Elkheir, Mohammed Seyam, Nada Abdelfattah, Nabila Ataby</i>	
Computer Science Literacy Atlas: Unpacking the Computer Science Education Standards Across Grade Levels	2732
<i>Sumi Hagiwara, Katherine G. Herbert, Minsun Shin</i>	
WIP: Automated Extraction of Domain-Specific Concept Maps Using a RAG-LLM Ensemble Framework	2739
<i>Zane Hutchens, Qiong Cheng</i>	
WIP: System Concept Compilation: A Generative AI Approach to Systems Modeling and Simulation	2744
<i>Jon Wade, Richard Gessner</i>	
WIP: Revealing the Hidden Curriculum: A Multi-Institutional Perspective	2749
<i>Suzanne Rivoire, Alexandra Schofield</i>	
From Structured Labs to Agile Teams: A Curriculum-Based Approach to Active Learning in First-Year Computer Engineering	2754
<i>Priit Ruberg, Peeter Ellervee, Risto Heinsar, Hardi Selg, Andres Eek</i>	
Reconstructing Historical Monuments and Environments: A Digital Approach to Education	2763
<i>Mario Casillo, Liliana Cecere, Francesco Colace, Angelo Lorusso, Michele Pellegrino</i>	
WIP: A Canvas Public Course for Electrical Engineering	2771
<i>Theresa M. Swift, Steve E. Watkins, Amardeep Kaur</i>	
Policy Comparison and Qualitative Analysis of Professional Engineering (PE) Licensure Between the United States and the U.S. Territories	2776
<i>Kevin Jay Kaufman-Ortiz</i>	
Exploring Graduate Student Views on Robotics Policy Relevant Information	2785
<i>Sogol Balali, Jennifer Parham-Mocello, Brent Steel, Michael D. Jones, Waseq Billah</i>	
Empowering the Next Generation: Teaching Web Vulnerabilities and Network Intrusion Detection with Machine Learning to Middle and High School Students	2794
<i>Zhenhua He, Sandra B. Nite, Joshua Winchell, Wesley A. Brashear, Dhruva K. Chakravorty, Lisa M. Perez Honggao Liu</i>	
How Mentors Benefit from a STEM-Based eMentoring Program	2800
<i>Cameron D. Denson, Niloufar Bayati, Jameelah Hayes</i>	
WIP: Defining Research Trends in Cybersecurity to Guide Doctoral Student Research	2805
<i>Diane Murphy, Nathan Green, Donna Schaeffer</i>	
Unpacking Intersectional Race-Gender Gaps in Computing Courses Through Institutional Data	2810
<i>Jennifer Alexandra Thompson, Sara Hooshangi</i>	
Improving Student Engagement in Online Courses Through Team-Based Learning	2819
<i>Arko Barman</i>	

WIP: Context-Aware AI in Learning Management Systems for Computer Science Courses	2827
<i>Archer Simmons, Maristela Holanda, Dilma Da Silva</i>	
Educating on IoT and AI: An Automotive-Based Case Study	2832
<i>Liliana Cecere, Domenico Santaniello, Pietro Giuseppe Strollo, Alfredo Troiano, Carmine Valentino</i>	
Creating Inclusive Engineers through Humanitarian Engineering Projects: Thematic Analysis of 23 SemiStructured Interviews	2841
<i>Kirsten Heikkinen Dodson, René Marius, Ruth Fessehay</i>	
Digital Twin and Predictive Maintenance in Cultural Heritage: A Multidisciplinary Educational Experience with HBIM and IoT	2847
<i>Francesco Colace, Flavia Ferrandino, Marco Lombardi, Angelo Lorusso, Carmine Valentino</i>	
Using Prompt Engineering to Enhance a Project-Based Learning Course on Project Management	2855
<i>Paula Mendonça, José Reginaldo Hughes Carvalho, Ana Carolina Oran</i>	
Analysis of Students' Patterns and Prediction Using edX Data and Learning Analytics	2864
<i>Pedro Manuel Moreno-Marcos, María Sanz-Gómez, Pedro J. Muñoz-Merino, Carlos Alario-Hoyos Iria Estévez-Ayres, Carlos Delgado Kloos</i>	
Gamification for Cultural Heritage Education: A Case Study on Learning Through Digital	2873
<i>Mario Casillo, Constanza Fiorella Duarte Petti, Angela Passeggiato, Michele Pellegrino Domenico Santaniello, Giusy Strollo</i>	
Permitting GenAI Use on Assessments in an Introductory Programming Course	2880
<i>Marko V. Lubarda, Vlado A. Lubarda, Curt Schurgers, Alex Phan, Saharnaz Baghdadchi, Huihui Qi</i>	
WIP: Assessing the Effectiveness of a Mixed-Reality Wisdom Community for Electrical and Computer Engineering Students	2885
<i>Hilda Cecilia Contreras Aguirre, Theoderic T. Platt, Bill Hamilton, Cristina Esparza, Marshall A. Taylor Luis Rodolfo Garcia Carrillo</i>	
A Qualitative Study of How Computer Science Students Develop Debugging Skills in a Curriculum	2890
<i>Keerti Banweer, Deborah Trytten</i>	
Code Insight: Evaluating an Active Learning Framework for Novice Programmers to Promote the Development of Code Review Skills	2899
<i>Keerti Banweer, Deborah Trytten</i>	
WIP: Exploratory Analysis of Code Quality Issues in CS1	2908
<i>Isabela Vieira Rodrigues, Igor dos Santos Montagner</i>	
WIP: Beyond Averages - the Impact of Survey Administration on User Experience Metrics	2912
<i>Laura Albrant, Lynn Albers, Leo C. Ureel</i>	
Enhancing Student Engagement in Computational Thinking by Encouraging Exploration in Horizontal STEM Learning Activities	2917
<i>Edward C Mayeux, Ting Liu, Joshua Earl Howell, Rebecca Schlegel</i>	
Applying Software Engineering Principles to Interdisciplinary AI Curriculum Development	2925
<i>George Frazier, Nan Sun, Joseph Kendall-Morwick</i>	

WIP: Developing and Accessing Programs for Improving Safety-Related Communications in Chemical Engineering Departments	2933
<i>Ronald J. Vogler, Isabelle L. Williams, Christina Al Tawil, Aayush M. Bendre Carlos J. Landaverde-Alvarado</i>	
WIP: CodeInspector: Automated LLM-Supported CS1-Level Code Assessment	2938
<i>Essa Imhmed, Edgar Ceh-Varela, Ludwig Scherer, George Candal, Ivan Sanjaya</i>	
Women in Cybersecurity: A Literature Mapping (2010-2024)	2943
<i>Maristela Holanda, Adrielly Lima, Luana Silva, Marjorie Mitzi, Emilly Bernardes, João Gondim Aletéxia P. F. Araújo, Christiana Chamon, Dilma Da Silva, Maria Emilia Walter</i>	
Team- Based Learning in a Large Introductory Circuits Course for Engineering Students	2952
<i>Lizandra Godwin, Lutfullahil Majid</i>	
WIP: Integrating Sustainability in Engineering Through Undergraduate Research and Hands-on Laboratory Projects	2958
<i>Carlos J. Landaverde-Alvarado, Amanda Nguyen, Emily Mellen, Finnegan I. McGoldrick</i>	
WIP: Teaching Students to Synthesize Knowledge by Recognition of Connections	2963
<i>Steffen Link, Chandrasekhar Radhakrishnan, Arijit Banerjee, Christopher Schmitz, Olga Mironenko Jonathon K. Schuh, Yang Shao, Rebecca Reck</i>	
Development of Situational Judgment Tests to Educate the Whole Engineer and Assess Complex Character-Based Ethical Decision-Making	2968
<i>Jessica Koehler, Olga Pierrakos, Kyle Luthy, Farnoosh Brock, John Karabelas, Robin Anderson Andy Brock</i>	
STEM Faculty Perspectives: Assessment Design in the Era of Generative AI	2976
<i>Ahmed Ashraf Butt, Syed Ali Kamal, Rabia Ashraf</i>	
Cultivating Character and Ethics via a Custom-Built AI-Chatbot in an Electric Circuits Activity	2982
<i>Hussein Abdeltawab, Kyle Luthy</i>	
Effectiveness of Workshops on Energy Management	2989
<i>Umer Farooq, Digvijaysinh Barad, Hannah Farias, Matt Elliot, Bryan P. Rasmussen, Saira Anwar</i>	
Integrating a Cyber Range Into Core Curriculum: Advancing Real-World Skills in Cybersecurity Education	2996
<i>Julie A. Rursch, Doug Jacobson</i>	
WIP: Student Feedback on Two Sociotechnical Modules in an Introductory Circuits Course	3003
<i>Musabbiha Zaheer, Cynthia J. Finelli, Susan M. Lord, Lea K. Marlor</i>	
WIP: Invisible, Yet DependABLE: Examining the Socialization Experiences of Engineering Professors of Practice Who Teach Online at a Public Research University	3008
<i>Kourtney Rogers Gruner</i>	
A Multi-Modal Investigation of Instructional Practices in an Undergraduate Engineering Classroom	3013
<i>Umer Farooq, Omar Al-Ani, Syeda Fizza Ali, Radhika Viruru, Saira Anwar</i>	
An Exploratory Investigation on the Use of Situational Judgement Tests to Cultivate Character and Evaluate Character in Engineering Learning Environments	3022
<i>Olga Pierrakos, Jessica Koehler, Kyle Luthy, Farnoosh Brock, Andy Brock, John Karabelas Robin Anderson</i>	

WIP: Easing the Transition to Project-Based Software Engineering Courses with Externally Sourced Projects	3031
<i>Nathan Sommer, Stan Kurkovsky, Chad A. Williams, Mikey Goldweber</i>	
From Play to Proficiency: A Systematic Literature Review on Learning Modalities and Transition Strategies in CS and AI Education	3036
<i>Yousuf Amanuel, Johannes Krugel</i>	
WIP: Feeling Behind in an Introductory Programming Course	3045
<i>Katherine A. Panciera, Ronald J. Nowling</i>	
WIP: The Impact and Effectiveness of Sociotechnical Interventions in Engineering Courses	3050
<i>Salman Mohagheghi</i>	
Exploring the Role of Graduate Student Mentors in Apprenticeship-Style Undergraduate Student Research Experiences in Engineering	3055
<i>Nosakhare Idiaghe, Jessica Deters</i>	
ILDBug: A New Approach to Teaching Debugging	3064
<i>Liia Butler, Charlotte Kiesel, Dipayan Mukherjee, Mohammed Hassan, Mattox Beckman, Geoffrey L. Herman</i>	
Enhancing Large Language Models for Automated Homework Assessment in Undergraduate Circuit Analysis	3073
<i>Liangliang Chen, Huiru Xie, Zhihao Qin, Yiming Guo, Jacqueline Rohde, Ying Zhang</i>	
WIP: Code Chronicles - A Virtual Museum of Programming Languages	3082
<i>Sherif E. Abdelhamid, Tremayne Waller</i>	
WIP: Turning Fake Chips into Learning Opportunities	3087
<i>Haniye Mehraban, Saad Azmeen-ur-Rahman, John Hu</i>	
WIP: Building a Bridge to the Future: Connecting Engineering Students with Alumni, Industry, and the Community Through an Innovative Outreach Program	3092
<i>Mario Minami, Celso S. Kurashima, Mario Gazziro, Wallace G. Ferreira, Camila C. Arantes, Cláudia F. E. de Paiva, Sônia M. Malmonge, Claudia Celeste Celestino, Vitor Bittencourt</i>	
Antecedents and Outcomes of Learning Management System Usage: Evidence from Developing Country Educational Institutions	3097
<i>Hanan Kuzat, Ibrahim Magboul, Fadi Herzallah</i>	
Exploring Educational Video Games for Learning Scrum: A Systematic Literature Review	3107
<i>Javier Alegre Landáburu, Daniel López-Fernández, Jesus Mayor, Edmundo Tovar Caro</i>	
Competencies to Educate the Whole Engineer: Building a Modern Engineering Curriculum at Wake Forest Engineering	3115
<i>Olga Pierrakos</i>	
WIP: Decoding Cybersecurity: An Ethnographic Case Study of Cybersecurity Awareness Education	3125
<i>Amber C. Williamson, Andrew O. Hall</i>	
Reimagining Higher Education Governance for Student Flourishing: Building Wake Forest Engineering Using Leader Character	3130
<i>Olga Pierrakos</i>	

WIP: Enhancing Grading Efficiency in Engineering Education Through Automation on a Flipped Classroom	3140
<i>Edwin Marte Zorrilla, Kimberly Stubbs, John Mendoza-Garcia, Reymi Then</i>	
WIP: Large Language Model-Enhanced Smart Tutor for Undergraduate Circuit Analysis	3145
<i>Liangliang Chen, Huiru Xie, Jacqueline Rohde, Ying Zhang</i>	
WIP: Visualizing Transitions: Exploring Queer Engineering Students' Pathways to Graduate School through Collaging	3150
<i>Animesh Paul, Kevin Jay Kaufman-Ortiz, Crystal Alicia Nattoo, Sri Yash Tadimalla</i>	
Development of an Optimization-Based Ranking Framework for Concurrent Estimation of Student and Course Skills	3155
<i>Anthony Dixon, Adan E. Vela</i>	
Categorizing Engineering Ethics Knowledge from Engineering Courses Across Different Disciplines	3163
<i>Bono Po-Jen Shih, Ivan E. Esparragoza</i>	
WIP: Advising in the Digital Age - Enhancing International Doctoral Student Experiences with Technology and Research	3171
<i>Himani Sharma, Ann McKenna</i>	
WIP: Leveling Up Learning: A Dungeons & Dragons-Inspired Approach to Teaching Object-Oriented Programming	3176
<i>Cassandra Thomas, Iryna Ashby, Marisa Exter</i>	
Examining Shifts in Sense of Belonging, Engineering Identity, Intent to Persist and Stress Levels: A Repeated Measures Study of First-Generation Students in a First-Year Engineering Program	3181
<i>Muhammad Asghar, David Reeping, Sheryl Sorby</i>	
WIP: Exploring Programmer Identity in the Figured World of an Undergraduate Creative Computing Classroom	3186
<i>David Mawer</i>	
Can LLMs be Fair Graders? Only if You Bribe Them with the Right Rubric	3191
<i>Samuel B Mazzone, Jack Forden, Dennis Brylow</i>	
A New Course on Wireless Networks and Protocols for IoT in Cyber Engineering	3200
<i>Yong-Kyu Jung, Lokesh Venkata Sai Santhosh Vidadala</i>	
WIP: How do Computing Professionals and Faculty Rank the Importance of Dispositions and Cross-Disciplinary Skills?	3205
<i>Marisa Exter, Nursah Yakut, Deepti Tagare, Mihaela Sabin</i>	
Multimodal Quiz Generation via RAG with LLM-as-Judge Evaluation	3210
<i>Mourya Teja Kunuku, Nasrin Dehbozorgi</i>	
Agentic AI Quiz-Based Learning System: Enhancing MCQ Generation via Long-Context Cached Retrieval-Augmented Generation	3217
<i>Devananda Sreekanth, Sreekanth Gopi, Nasrin Dehbozorgi</i>	
Exploring Undergraduate Students' Utilization and Perceptions of Generative AI in Engineering: Insights from an Introductory Statics and Mechanics of Materials Course	3225
<i>David A. DeFrancis, David M. Pabst, Lee A. Dosse, Jacklyn F. Wyszynski, Matthew M. Barry</i>	

Global South, Global Scale: Rethinking EdTech from the Holistic Approach	3233
<i>Hyojung Kim, Shuoyang Zhang</i>	
Learning Mathematical Vectors' Properties and Operations using the LSEESC Methodology in Engineering and Science Students	3239
<i>Daniel Sánchez Guzmán, Erika Cervantes Juárez</i>	
WIP: Impact of the CHIPS & Science Act on Engineering Education: Analyzing Funding Trends and Institutional Growth	3244
<i>Wenjing Gong, Yuchen Wang, Suxia Cui, Xinyue Ye</i>	
Predictive Analysis of Student Dropout in the Computer Science Program at the University of Brasilia	3249
<i>Giovana Pinho Garcia, Maristela Holanda, Marcelo Mandelli, Jonathan Rosa Moreira, Dilma Da Silva</i>	
WIP: Enhancing Game-Based Learning with AI-Driven Peer Agents	3257
<i>Chengzhang Zhu, Cecile H. Sam, Yanlai Wu, Ying Tang</i>	
Comparing the Usability of Rating and Ranking Scale Types in Perceptions of Sketched Engineering Products	3262
<i>Shiho Nakamura, Mohen Li, Julie Linsey</i>	
WIP: Assessing 21st Century Skills of High School Students in a Machine Learning Workshop with TinyML	3271
<i>Algeir P. Sampaio, Paulo C. M. A. Farias, Roberto A. Bittencourt</i>	
WIP: Designing Content-Relevant Interventions to Promote Academic Resilience in an Engineering Project Course	3276
<i>Alessandra O. Napoli, Ross Venook, Shima Salehi</i>	
WIP: Parents Study: A Different Approach to Racial Equity in STEM	3281
<i>E. Shirl Donaldson, Jennifer Lacosse, Thiago Ferreira</i>	
WIP: EdQuest - Enhancing Educational Resource Discovery with AI-Powered Web Scraping	3285
<i>Ashrith Kumar Devara, Nasrin Dehbozorgi</i>	
Students' Critical Thinking: Impact of FossilSketch, an Active Learning Educational Application	3290
<i>Daniel S. Bahng, Anna Stepanova, Syeda Fizza Ali, Utsav Dabhi, Satya Bhavsar, Divij Bajaj</i>	
<i>Christina L. Belanger, Tracy Hammond, Saira Anwar</i>	
Correlation of Students' Academic Progress, Counseling and Tutoring with Graduating Attributes in Outcome-Based Education (OBE): A Pilot Study of an OBEXcel Teaching and Learning Outcomes Project	3297
<i>Asad Abbas, Claudia Bautista-Flores, Samira Hosseini, Mehul Mahrishi, Ahsan Ali, Nada Eltaiba</i>	
WIP Academia to Industry: Mapping Skills and Careers for Engineering Education Doctorates	3302
<i>Lilianny Virquez, Debarati Basu, Sreyoshi Bhaduri</i>	
WIP: Teaching Engineers to Draw People: Enhancing User-Centered Thinking and Self-Efficacy	3307
<i>Shiho Nakamura, Mohen Li, Sarai Colorado-Landero, Denis Dorozhkin, Julie Linsey</i>	
WIP: Incorporating Active Learning and Group Work into Specifications Grading for Graduate Level Data Science Courses	3312
<i>Mahima Agumbe Suresh</i>	

WIP: The Graduate Student Role in Undergraduate Research Mentoring: Perspectives from Participants	3317
<i>Christina A. Pantoja, Anastasia M. Rynearson</i>	
WIP: Supporting Student Learning About Embedded Systems Through Hardware-Software Antipatterns	3322
<i>Diane T. Rover, Fana Teffera, James O. Joseph, Jesse Gillingham</i>	
WIP: Considerations for Generative AI	3327
<i>Ronald J. Glotzbach</i>	
WIP: A Critical Self-Reflection Case Study on Teaching Sociotechnical Content in an Engineering Course	3330
<i>Chelsea Andrews, Morgan Hynes, Ethan Danahy, Trevion Henderson, Jenn Cross, Brian P. Timko, David Zabner, Emily Carlson</i>	
WIP: Diary of an Engineer: Using Project Notebooks as a Formative Assessment in Project-Based Courses	3335
<i>Alessandra O. Napoli, L'Nard Tufts, Ross Venook, Shima Salehi</i>	
A Comparative Analysis on Discernment of Human Versus AI-Generated Art	3340
<i>Hortense Gerardo, Marie Clemenceau, Kevin Tellier</i>	
A Systematic Review of Video-Based Computing and Programming Education: Do Online Videos Really Teach Programming?	3345
<i>Otávio Lube dos Santos, Davidson Cury, Pedro David Netto Silveira, Wagner de Andrade Perim, Jadson do Prado Rafalski</i>	
WIP: Integrating Social Learning into Engineering Education for Sustainable Water Management: Bridging Technical Solutions and Societal Needs	3354
<i>Samia Tarannum, Sarah Blackowski</i>	
WIP: Mapping Misconceptions Across Key Electric Circuit Concepts	3359
<i>Vincent Fakiyesi, Olanrewaju Paul Olaogun, Isaac Dunmoye, Nathaniel Hunsu</i>	
Leveraging Llms for Streamlining and Demystifying the Systematic Literature Review Process	3364
<i>Bo Pei, Xiaojiao Sun</i>	
Assessing Refactoring in Education: A Systematic Literature Review on Evaluation, Goals, and Impact	3371
<i>Sarah Alanqari, Mohamed Wiem Mkaouer, Christian Newman</i>	
ChatGPT as a Teaching Assistant in a CS1 course: An Experience Report	3380
<i>Luiza N. Gomes, Camila F. Fraga, Maristela Holanda, Dilma Da Silva</i>	
WIP: A Computational Approach to Streamlining Information Management for Farmers Developed through a Community-Engaged Learning Experience	3389
<i>Eddy Pan, Arianne Fong, Alessandra Ferzoco</i>	
Guidelines for Designing Engineering Problems to Bootstrap Students' Deep Learning Based on Productive Failure Reflecting Brain Activity	3394
<i>Tathyana Moratti, Runu Proma Das, Yeongji Lee, Aarti Sign, David Kraemer, Beshoy Morkos</i>	
Interactive Visual Programming on CaSMM: The Benefits and Challenges of Children's Computational Thinking Development in STEM Learning	3403
<i>Charles Cagle, Ting Liu, Carter Mayeux, Rebecca Schlegel</i>	

WIP: Development and Pilot Results of ORBIT: a Visual Robot-Programming Tool Supporting Computational Thinking and Executive Functioning Skills in Special Education	3411
<i>Robert Hayes, Elissa Milto, Evelyn Goroza, Jennifer Cross</i>	
GoodBot: The Engineering and Computer Science Student's Best Friend	3416
<i>Otávio Lube dos Santos, Davidson Cury, Pedro David Netto Silveira, Wagner De Andrade Perim Jadson Do Prado Rafalski</i>	
WIP: Review and Analysis of Mixed Methods Approaches in Engineering Education Research	3425
<i>Praveen Meduri, Chillara Venkata Varun, Mary McCarthy Hintz, Lisa Romero, De-Laine M Cyrenne</i>	
WIP: Crafting a Modern Data Visualization Course: Bridging Practice, Reflection, and Innovation	3430
<i>Sergiu M. Dascalu, Hossein Jamali</i>	
Development, Usability, and Effectiveness of the FossilSketch Application in Outreach Experiences	3435
<i>Utsav Dabhi, Divij Bajaj, Heba Ibrahim Aly, Anna Stepanova, Christina Belanger, Tracy Hammond Saira Anwar</i>	
K-12 Leaders' Perspectives on AI's Risks and Benefits - Findings from a Follow-Up Survey Study	3442
<i>Raffaella Borasi, Karen DeAngelis, Sharon Mason, Yu Jung Han, Patricia Vaughan-Brogan David E. Miller</i>	
WIP: Integrating Contemplative Practices Into First-Year Engineering Education to Foster Compassion and Mindfulness	3451
<i>Prisha Bhatia, Yevgeniya V. Zastavker, Madhvi J. Venkatesh</i>	
Creating Smart Learning Objectives Relationship Between Application Engagement and Performance	3456
<i>Chris M. Bahng, Anurag Srivastava, Daniel S. Bahng, Ahmed Ashraf Butt, Asefeh Kardgar, Swetha Nittala Saira Anwar</i>	
Boosting Engagement and Motivation in Latin American Engineering Students Through Gamified Calculus Competitions	3463
<i>Roberto Portillo, Alberth Alvarado</i>	
Integrating Community Knowledge and Resources into Community-Based, Project-Based Learning: The Case of an Engineering Design Abroad Program	3470
<i>Collette P. Higgins, Trevion S. Henderson, David Zabner</i>	
The Longitudinal Impact of Engineering Students' Noncognitive Attributes on Their Academic Performance and Retention During the COVID-19 Pandemic	3479
<i>Fazel Ranjbar, So Yoon Yoon, P.K. Imbrie</i>	
WIP: Academic Resilience in Engineering - The Role of Risk and Protective Factors on Student Performance	3488
<i>Olanrewaju P. Olaogun, Vincent J. Fakiyesi, Adurangba V. Oje, Nathaniel J. Hunsu, Peter O. Olaogun</i>	
Moveit! - A Board Game for Teaching Computer Science Concepts	3493
<i>Martin Erwig, Jennifer Parham-Mocello</i>	
A New Method of Collaboration in Block-Based Programming Environments	3503
<i>Isabella White, Madison Thomas, Veronica Catete</i>	
Effects of an Instructor-Provided Study Plan on Students' Exam Preparation: Results from a Pilot Study	3512
<i>Divya Bhargava</i>	

WIP: Design and Introduction of a Culturally Relevant and Responsive Instruction Workshop to STEM Higher Education Instructors	3517
<i>So Yoon Yoon, Lei Wang, Kate L. Klein, JiaJun Xu, Ronnie Brown, Feiyang Bai</i>	
Classification of Kinematics Problems Using Artificial Intelligence for Design Tests in Physics Education in Engineering	3522
<i>Ja Catana-Castellanos, E Cervantes-Juárez, D Sanchez-Guzman, Gm Gallegos</i>	
WIP: Moverè: Interactive Motivational Model to Promote Diabetic Patients' Adherence to Health Protocols	3527
<i>Fernanda P. Mota, Adenauer C. Yamin, Ana Marilza Pernas</i>	
WIP: A Flexible and Innovative Method to Teach a Design Technology Course to Empower and Inspire Students' Learning and Prepare Them for Future Employment	3532
<i>Kenny M. Fotouhi, Mahdi J. Fotouhi, Joel Tomlinson</i>	
WIP: Negative and Positive Behaviors Exhibited by Students in the Context of Engineering Project Team	3537
<i>Fazel Ranjbar, Junqiu Wang, Samieh Askarian Khanamani, Jutshi Agarwal, P.K. Imbrie</i>	
WIP: Analyzing Students' Reasoning Patterns in Electric Circuit Misconceptions: A Thematic Approach	3542
<i>Vincent Fakiyesi, Deborah Moyaki, Taiwo R Feyijimi, Nathaniel Hunsu</i>	
WIP: What is the Purpose of Education? Perspectives of Engineering Students and Their Faculty	3547
<i>Jonathan D. Stolk</i>	
WIP: Study of the Impact of Pre-Requisite Courses on Student Learning in Linear Systems	3552
<i>Eesha Atif, Laura Bottomley</i>	
“Why is it doing that?” Troubleshooting Microelectronics Integration in Mathematics (WIP)	3557
<i>Emily M. Haluschak, Virginia L. Hawkins, Christine H. McDonnell, Bruce Wellman, Morgan M. Hynes S. Selcen Guzey, Greg J. Strimel, Tamara J. Moore</i>	
A Quantitative Study on the Navigational and Social Capital of Engineering Students from Multiple Institutions	3562
<i>Adetoun Yeaman, Gisella Lamas-Samanamud, Randi J. Sims, Heather R. Beem, Janie Moore, Xiaojing Yuan</i>	
Sex-Based Differences and Learning Satisfaction in Collaborative Virtual Reality: Insights from the Community of Inquiry Framework	3568
<i>Isaac D. Dunmoye, Julie P. Martin, Deborah Moyaki, Vincent O. Fakiyesi, Olanrewaju P. Olaogun Nathaniel Hunsu, Ayobami Dunmoye</i>	
WIP: Investigating Engineering Students' Adoption Intention of AI for Competency Development	3577
<i>Deborah Moyaki, Vincent Fakiyesi, Isaac Dunmoye, Nathaniel Hunsu</i>	
Perception of Artificial Intelligence in Education by High School Students in a Rural Region in the US in Comparison with US in General and Europe	3582
<i>YanJun Yan, Vladislav Slavov</i>	
WIP: QUINTET: A Platform for Quantum Internet Education and Training	3591
<i>Sahil Mangotra, Abhishek Parakh, Mahadevan Subramaniam</i>	

WIP: Quality-Control Metrics for Crowdsourced Labeling: Promoting Dataset Reliability for Machine-Learning Applications	3596
<i>Aditya Iyer, Tanmaiye Battula, Manoj Katravath, Edward F. Gehringer</i>	
Effective Approaches in Teaching Computer Science Fundamentals: A Student's Perspective	3601
<i>Divya Nalla, Anvesh Nookala</i>	
How Students Use Generative AI: Insights from Conversation Log Analysis	3606
<i>Zepei Li, Sotiria Koloutsou-Vakakis, Tomasz Kozlowski, Volodymyr Kindratenko, Abdussalam Alawini</i>	
WIP: Uncovering Student Course-Taking Patterns Using a High-Dimensional Clustering Technique	3613
<i>David Reeping, Yunmeng Han, Nahal Rashedi</i>	
Exploring Disciplinary Identities and Computational Thinking Through Bugs, Repairs, and Resistance	3618
<i>Alicia C. Lane, Efrat Ayalon, Gabriella Anton, Noel Enyedy</i>	
WIP: Iterative Change: Stories of SCCT and Integration in an Experimental Engineering Course	3627
<i>Rebecca Thomas, Jenny Tilsen, Michael S. Thompson, Alan Cheville</i>	
A Scoping Review on AI Integration in Engineering Education and its Impact on Students' Critical Thinking	3632
<i>Fatemeh Mirzahosseini Zarandi, Madeline Martin, Siqing Wei, David Reeping</i>	
WIP: Designing Faculty Mentorship at Scale: Lessons from the Mentorship 360 Faculty Mentoring Program at Arizona State University	3640
<i>Jennifer M. Bekki, Samantha R. Brunhaver, Ann F. McKenna</i>	
PhawAI - Code, Culture, and Collaboration: Reflections on Pioneering an AI Workshop for Emerging Computer Scientists in Arequipa, Perú	3645
<i>Nils Murrugarra-Llerena, Rosa Y. G. Paccotacya-Yanque, Sreyoshi Bhaduri, Lourdes Ramirez Cerna, Jeffri Murrugarra-Llerena, Tilsa Oré Mónago, Cristhian Chavez Ruiz</i>	
Empowering Pre-College Learners with GDPR Awareness: A Novel Experimental Study	3655
<i>Ankur Chattopadhyay, Alexandra Lisa, Binh Nguyen</i>	
WIP: Exploring Student-Created AI Agents and Instructional Videos to Foster Engagement in Computing Education	3662
<i>Lucas G. Zangari, Olufisayo Omojokun, Pedro Guillermo Feijóo-García</i>	
Pedagogical: Feedback Tool to Reduce Software Vulnerabilities in Non-Security Computer Science Courses	3666
<i>Andrew Sanders, Gursimran Singh Walia, Lucas Cordova, Teo Mendoza</i>	
Spotlighting Three Critical Themes from Computing Students in a Growth Mindset Program	3674
<i>Kimberly Fluet, Yadi Zhang, Sharon Mason</i>	
WIP: Examining the Gender Difference on the Five Facets of Need for Cognitive Closure Among Engineering Students	3682
<i>Zain ul Abideen, Sehrish Jabeen, Oenardi Lawanto, Angela Minichiello, Assad Iqbal</i>	
LLM Chatbot-Creation Approaches	3687
<i>Hemil Mehta, Tanvi Raut, Kohav Yadav, Edward F. Gehringer</i>	
Integrating User-Centered Design (UCD) Into Computer Science Curricula to Support Gender Diversity	3696
<i>Summer Abramson, Neha Srinivasa, Pedro Guillermo Feijóo-García</i>	

Integrating Self-Regulated Learning into Engineering Courses: A Study of Student Perceptions and Participation	3704
<i>Huihui Qi, Changkai Chen, Alejandro De Leon, Richard E Vallejo, Curt Schurgeres, Andy Rabanal Yu Ming Li, Celeste Pilegard</i>	
WIP: A Systematized Literature Review on the Role of Goal Orientation in Active Learning and Engagement During Problem-Solving in STEM Education	3713
<i>Zain ul Abideen, Sehrish Jabeen, Assad Iqbal</i>	
Explaining Undergraduate Student Adoption of Integrated Development Environments	3718
<i>Lakshita Malhotra, Jennifer Parham-Mocello</i>	
Can Technology Promote Self-Directed Learning in Introductory Computing Courses?	3727
<i>Debarati Basu, Abigail Blalock, Chad M. Rohrbacher</i>	
Exploring Students' Insights on Creating Videos to Learn Software Design and Engineering	3735
<i>Pedro G. Feijóo-García, John D. Centner, Lucas G. Zangari, Chase G. Wrenn, Neha Rani Juan S. Sánchez-Gómez, Olufisayo Omojokun</i>	
Exploring the Relationship Between Achievement Goal Orientation and Cognitive Engagement in Engineering Problem-Solving	3744
<i>Zain ul Abideen, Sehrish Jabeen, Oenardi Lawanto, Angela Minichiello, Assad Iqbal</i>	
Exploring the Impact of the Need for Cognitive Closure on Undergraduate Engineering Students' Cognitive Engagement During Problem Solving	3751
<i>Zain ul Abideen, Sehrish Jabeen, Oenardi Lawanto, Angela Minichiello, Assad Iqbal</i>	
WIP: Elementary Pre-Service Teachers' Perceptions of Engineering Within Integrated STEM	3758
<i>Ursula Nguyen, Deepika Menon, Guy Trainin, Azadeh Hassani, Fatemeh Ashrafabadi</i>	
WIP: Developing Instructional Resources to Cultivate Students' Practical AI Ethics Competencies Through Collaborative Learning	3763
<i>Kylee N. Shiekh, Qin Zhu, Katherine L. Chiou, Sandy Woodson</i>	
WIP: Examining a Different Approach to Create Successful Opportunities for Collaboration between University and Community Partners in International Service Learning	3767
<i>Kadri Parris</i>	
Enhancing Operating Systems Courses Through Automated Assessment	3772
<i>Mitchell Buckner, Devanshi Prajapati, Ruben Acuña</i>	
WIP: Developing AI-Powered Chatbots as Learning Assistants: A Work-in-Progress Study on Enhancing Undergraduate Computer Science Education	3781
<i>Tajay Jackson, Nickmoon Mware, Hong Jiang</i>	
WIP: Incorporating Artificial Intelligence When Teaching in Electronics Engineering Technology Program	3786
<i>Moftah Ali</i>	
Preparation Practices: Faculty Perspectives on Technical Interviews at Hispanic-Serving Institutions in the Southeastern Region of the United States	3791
<i>Ashmita Thapaliya, Stephanie J. Lunn, Edward C. Dillon, Krystal L. Williams</i>	
Exploring Engineering Students' Artificial Intelligence (AI) Literacy and Use of AI in Problemsolving	3800
<i>Huihui Qi, Yu Ming Li, Changkai Chen</i>	

WIP: “Can You Do My Homework?” and Other Queries - an Analysis of Student Prompts to Generative AI in an Engineering Statics Course	3807
<i>Jacklyn F. Wyszynski, Lee A. Dosse, Matthew M. Barry</i>	
The Impact of AI Tools on the Student Programming Experience: Interactions, Attitudes & Perceptions	3812
<i>Sri Yash Tadimalla, Mary Lou Maher, Nadia Najjar, Coy Simon</i>	
Evaluating Handwritten and Multimodal, Free-Style Responses in Algorithms and Data Structures: A RAG-LLM-Based Feedback Framework	3822
<i>Samhith Dara, Qiong Cheng</i>	
WIP: How Compassionate STEM Education is Defined: A Review of Literature on the Role of Compassion in STEM Education	3829
<i>Theo Lazzari, Qin Zhu</i>	
WIP: How Effective are Llm-Implemented Autograders for Programming Assignments Compared to Human Graders?	3834
<i>Kevin Lewis, Hui Chen</i>	
WIP: Integrating Generative AI into Project-Based Learning for Advanced Power Systems Analysis	3839
<i>Anthony Robol, Robert Kerestes, April Dukes, Mary Besterfield-Sacre</i>	
WIP: Non-Legacy or FirstGen Latinx Engineering Entrepreneurship	3844
<i>Noemi V. Mendoza Diaz, Alma S. Galvez Herrera</i>	
WIP: Bias Beneath the Surface: AI-Driven Gender Representation Analysis in Academic Communications	3848
<i>Kumara Srivatsa Kondapalli, Benny Nottonson, Devery Rodgers, Hossein Sayadi</i>	
WIP: Leveraging Collaborative Online International Learning (COIL) Projects for Industry-Driven Software Development in Undergraduate Education	3853
<i>Ross McLean, Jamie Sundance McDonald, John N.A. Brown</i>	
Identification of Digital Competencies to Strengthen the Graduation Profile of Students Close to Graduation From a Polytechnic University in Central Mexico	3856
<i>Martha P. Robles Gutiérrez, Noemi V. Mendoza Diaz, Lourdes E. Del Razo Robles</i>	
<i>Omar A. Dominguez-Ramirez, Luis Arturo Guerrero Azpeitia</i>	
Pre-Conference Workshop: Create Engaging and Accessible Materials with PreTeXt	3864
<i>Chrissy Safranski, Oscar Levin</i>	
Conceptual Analysis and Conceptual Engineering: Methodological Issues in the Philosophy of Computing Education	3868
<i>Roger McDermott, Mats Daniels, John N.A. Brown, Åsa Cajander</i>	
Pre-Conference Workshop: Using Story-Driven Learning to Support Students as STEM Professionals	3877
<i>Michelle Marincel Payne, Ben Jelen, Reva Johnson, Joseph Le Doux, Rachael Pitts-Hall, Lucas Power</i>	
<i>Janece Shaffer, Ariana Turner, Julia Williams</i>	
Pre-Conference Workshop: Podcast-Based Learning for Engineering and Computer Science Educators	3881
<i>Kurt Paterson, Justin Henriques, Michelle Jarvie-Eggart, Mary Raber, Reva Jonson, Winifred Opoku</i>	
WIP: Students in Dysfunctional Team: First Year Engineering Design Course Perspective	3885
<i>Junqiu Wang, Fazel Ranjbar, P.K. Imbrie</i>	

Special Session: Scalable K-8 Math Support for Equitable Engineering Success	3890
<i>Mohamed Y. Selim, Renee Gibert, Namrata Vaswani</i>	
Special Session: Fostering Psychological Safety in Doctoral Advising Relationships	3894
<i>Mark Huerta, Larkin Martini</i>	
Special Session: Use of Generative AI for Designing and Evaluating Course Learning Objectives and Aligned Assessments	3898
<i>Saira Anwar, Ahmed Ashraf Butt, Syeda Fizza Ali</i>	
Special Session: Design your Ideal Work Group: Intentionally Structuring Research and Teaching Group Culture to Better Navigate Differences in Thinking	3901
<i>Courtney Faber, Danielle Lewis, Lorna Treffert</i>	
Pre-Conference Workshop: Intentional Integration of Reflection in Engineering and Computer Science Courses	3906
<i>Heidi A. Diefes-Dux, Logan A. Perry</i>	
Integrating Technical and Professional Communication into the Engineering Curriculum: International Perspectives from Four Programs	3910
<i>Lydia Wilkinson, Alan Chong, Suzanne T. Lane, Carl Johan Carlsson, Magnus Gustafsson Rosa Margarita Galán Vélez</i>	
Special Session: A Hands-on Exploration of the Engineering Education Community in Our Ever-Changing World	3915
<i>Krista M. Kecskemety, Rachel Louis Kajfez, Tyler Stump</i>	
Pre-Conference Workshop: Artificial General Intelligence Integration into Engineering Education, a Framework That Balances Technology with Human-Centered Skill Development	3919
<i>Trini Balart, Kristi J. Shryock</i>	
Panel Session: Engineering is Humanitarian - Creating the Best Engineers for the Most Impact	3923
<i>Kirsten Heikkinen Dodson</i>	
Special Session: Teaching the AI Curriculum in K-12: Technological and Engineering Education imperatives for the 21st century	3927
<i>Arnold Pears, Matti Tedre, Henriikka Vartiainen, Rajendra K Raj</i>	
Special Session: A Chicana Feminist Approach to Supporting Latina Students in Engineering and Computing	3930
<i>Sarah L. Rodriguez</i>	
Special Session: Students' Experiences and Sense of Academic and Social Belonging within the 'Globalized' Engineering Graduate Education: Translating Research into Practice	3934
<i>Eunsil Lee, Susan Sajadi</i>	
Pre-Conference Workshop: Innovative K-12 Educator Sessions: Partnerships Between TryEngineering & Universities	3938
<i>Stamatis Dragoumanos, Debra Gulick, Dawna Schultz</i>	
Pre-Conference Workshop: Write and Evaluate Like a Pro for FIE-Excelling as an Author and Reviewer in Engineering Education Research	3941
<i>Noemi V. Mendoza Diaz, Deborah A. Trytten, Rachel Louis Kajfez, So Yoon Yoon, Saira Anwar</i>	

Special Session: Artificial Intelligence for Research and Teaching: Adopting Emerging Technologies in Engineering Education	3944
<i>Ibukun Osunbunmi, Stephanie Cutler, Taiwo Feyijimi</i>	
Special Session: Space Teams Academy Transforming STEM Education Through Virtual Space Exploration	3948
<i>Jasleen Kaur, Fernando Arias, Elise Kooock, Gregory E Chamitoff</i>	
WIP: Enhancing Computational Thinking and Engagement of Undergraduate Students Through Collaborative Game Development in the Interdisciplinary Course	3952
<i>Jinsook Park, Andrew Jung</i>	
Student Panel Session: Summer Bridge and First-Year Engineering Experience	3957
<i>Lorena Benavides-Riano, Mahnas Jean Mohammadi-Aragh</i>	
(Pre-Conference Workshop) Artificial Intelligence for Document Information Extraction and Synthesis: Advancing Research, Teaching, and Learning with LLMs and the TAIWO Framework	3961
<i>Taiwo Raphael Feyijimi, Ibukun Samuel Osunbunmi</i>	
Communicating the Value and Contributions of Engineering Education Research to Multiple Stakeholders	3966
<i>Cynthia J. Finelli, Katreena Thomas, Lisa Benson</i>	