Midwest Instruction and Computing Symposium (MICS 2023)

Cedar Falls, Iowa, USA
31 March - 1 April 2023

MICS 2023 Program

Technical Session 1: 1:30 – 2:30 Friday March 31

Deep Learning: Sabin Hall Room 2		Session Chair: Elliott Forbes	
1:30	Regenerating Audio Data from Silent Video through Deep Neural Networks	Konrad Rozpadek, Adam Haile, Samir Mahmud and Alexander Neuwirth	1
2:00	Error-Correcting Music Transformers	Jonathan Keane, Josiah Yoder and Michael Conner	9

Security: Wright Hall Room 9		Session Chair: Erich Rice	
1:30	Can Hackers Cash-in On the Sensitive Data Contained in Cache?	Erich Rice, Dennis Guster and Li Dai	19
2:00	Discovering Vulnerabilities in Web Browser Extensions Contained by Google Chrome	Chapin Johnson, Sharveen Paramiswaran and Akalanka Mailewa	34

Cloud Computing: Wright Hall Room 10		Session Chair: Akhtar Hussain	
1:30	Survey on Security and Privacy of Cloud Computing Paradigm: Challenges and Mitigation Methods	Akhtar Hussain, Jun Liu and Eunjin Kim	51
2:00	Survey on Security and Privacy Issues in Cloud-based Big Data Applications	Vedant Kharche and Jun Liu	66

CS Education: Wright Hall Room 105		Session Chair: Tim Krause	
1:30	Interactive Mood Boards to Teach User Experience (UX) Principles as Part of an Agile Methodology	Tim Krause	81
2:00	Tutorial on TensorFlow Spark for BCI Augmented Robotics	Adriano Cavalcanti	91

Technical Session 2: 3:00 – 4:00 Friday March 31

Deep Learning: Sabin Hall Room 2		Session Chair: Joshua Grant	
3:00	Transforming MoonBoard Climbing Route Classification and Generation	Joshua Grant, Michael Kirkton, Aiden Miller, Aydin Ruppe, Benjamin Weber and Ryan Kruk	109
3:30	Separating Spaces in Relative Attention for Music Generation	Michael Conner, Josiah Yoder and Jonathan Keane	118

Security: Wright Hall Room 9		Session Chair: Anushka Hewarathna	
3:00	Encryption Methods and Key Management Services for Secure Cloud Computing: Review	Tristan Moore, Samuel Conlon, Anushka Hewarathna, Thivanka Dissanayaka M and Akalanka Mailewa	129
3:30	Darknet Traffic Classification using Deep Learning	Quinn Sullivan and Muhammad Abusaqer	N/A

Image Processing: Wright Hall Room 10		Session Chair: Brendan Betterman	
3:00	Imaging Using 2.4GHz	Brendan Betterman, Richard Anderson and Baozhong Tian	147
3:30	Monocular Vision and Sensor Coupling for Indoor Localization	Houlin Chen, Lu Liang and Lei Wang	160

CS Education: Wright Hall Room 105		Session Chair: Mark Fienup	
3:00	Computing for Data Science Course	Mark Fienup	176
3:30	Catapult Launch for Python Data Science Libraries	Leon Tabak	183

Robotics Contest and Pizza Party

Sponsored by:

Technical Session 3: 9:00 – 10:00 Saturday April 1

Deep Learning: Sabin Hall Room 2		Session Chair: Muhammad Abusaqer	
9:00	Cyberbullying Classification Using Three Deep Learning models: GPT, BERT, and RoBERTa	Muhammad Abusaqer and Charles Fofie Jr	187
9:30	Automated Categorization of Cybersecurity News Articles through State-of-the-Art Text Transfer Deep Learning Models	Nathan Scott, Jt Snow and Muhammad Abusaqer	N/A

Security: Wright Hall Room 9		Session Chair: Juliana Nkafu	
9:00	Survey of Application of Machine Learning Methods in the Development of Network Intrusion Detection and Prevention Systems.	Juliana Nkafu and Jun Liu	N/A

Societal Impact of CS: Wright Hall Room 10		Session Chair: Roger Massmann	
9:00	Quantum Computing: An Assessment into the Impacts of Post-Quantum Cryptography	Roger Massmann, Nick Grantham and Akalanka Mailewa	203
9:30	Automation in the Food Service Industry, and It's Wide Reaching Effects	Sieger Canney	223

CS Education: Wright Hall Room 109		Session Chair: Jim Seliya	
9:00	Investigating Curiosity in Student Text Data	Paul Meisner, Mitchell Hanson, Naeem Seliya, Benjamin Fine, Rushit Dave and Mounika Vanamala	230
9:30	Practical studying and conscious lifestyle	Thao Huy Vu and Asaad Saad	N/A

Technical Session 4: 10:30 – 11:00 Saturday April 1

Deep Learning: Sabin Hall Room 2	Session Chair: Autumn Beyer	
10:30	Relative Attention For Video Frame Generation Tasks	Autumn Beyer, Mitchell Johnstone, Sam Keyser, Ryan Kruk, Tillie Pasternak, Tyler Schreiber and Michael Conner	243

User-Interface Testing: Wright Hall Room 9	Session Chair: Ariana Beeby	
10:30	Constructing a UX Testing Platform using Embedded Computing Systems	Ariana Beeby and Erik Steinmetz	251

Image Processing: Wright Hall Room 10	Session Chair: Sydney Balboni	
10:30	XprospeCT: CT Volume Generation from Paired X-rays	Sydney Balboni, Natalia Bukowski, John Cisler, Andrew Crisler, Joshua Goldshteyn, Julia Kalish, Ben Paulson and Theodore Colwell	257

Microarchitecture GUI Tool: Wright Hall Room 109	Session Chair: Adam Grunwald	
10:30	dptv: A new pipetrace viewer for microarchitectural analysis	Adam Grunwald, Phuong Nguyen and Elliott Forbes	270

Keynote Speaker

Dheryta Jaisinghani is an Assistant Professor in the Department of Computer Science at University of Northern Iowa since August 2020. Her research lab – SyNthesIs (Systems for Next generation of Intelligent networkS) at UNI aims to develop user-friendly and cost-effective systems for smart buildings (offices and classrooms), mobile applications to solve student health challenges at the university, and algorithms to improve the performance of operational WiFi networks.