

Proceedings

22nd Conference on Software Engineering Education and Training

CSEET 2009

17-20 February 2009 • Hyderabad, Andhra Pradesh, India



Los Alamitos, California
Washington • Tokyo



22nd Conference on Software Engineering Education and Training

CSEET 2009

Table of Contents

Foreword

Conference Organizers

Reviewers

Keynotes

Software Engineering: Research-Led Education with Human Values1

Rajeev Sangal

Software Engineer to Global Leader: Service Provider and Trusted Advisor2

Ed Cohen

Making Quality Attributes First Class Entities3

Len Bass

ASEET

Software Architecture Design4

Len Bass

Delivering Software Engineering Skills5

Lynn Carter

Teaching an Introductory Software Engineering Course in a Computer Science
Program7

Pankaj Jalote

Session 1: Performance Evaluation and Assessment

Case Studies as Assessment Tools in Software Engineering Classrooms8

Kirti Garg and Vasudeva Varma

Generic Skills in Software Engineering Master Thesis Projects: Towards Rubric-Based
Evaluation12

Robert Feldt, Martin Höst, and Frank Lüders

Software Engineering Education at TCS Induction - An Experience Report16

Smita Skandan and Meera Sidhardhan

Session 2: Curriculum and Teaching Materials

A Requirements Engineering and Management Training Course for Software Development Professionals	20
<i>João M. Fernandes, Ricardo J. Machado, and Stephen B. Seidman</i>	
Using Software Project Courses to Integrate Education and Research: An Experience Report	26
<i>Supannika Koolmanojwong and Barry Boehm</i>	

Session 3: Learning Environments and E-learning

Agile Software Factory for Student Service Learning	34
<i>Joseph Chao and Mark Randles</i>	
An Evaluation of Using a Game Development Framework in Higher Education	41
<i>Bian Wu, Alf Inge Wang, Jan-Erik Strøm, and Trond Blomholm Kvamme</i>	

Session 4: Curriculum and Teaching Materials

Application and Appreciation: Changing Course Structure to Change Student Attitudes	45
<i>Janet E. Burge</i>	
IT SPIRAL: A Case Study in Scalable Software Engineering Education	53
<i>Michael Barker and Katsuro Inoue</i>	
Using Rich Multimedia Case Studies: Developing a Scalable Authoring Platform for Academia and Industry	61
<i>Gil Taran, Ryan Miller, Ramesh Seela, and Ali Shojaeddini</i>	

Session 5: Internships and Projects

A Study on a Multidimensional Model of Mum Effect among IT Students	69
<i>Sakgasit Ramingwong, A.S.M. Sajeev, and Lachana Inchaiwong</i>	
Designing a Multi-disciplinary Software Engineering Project	77
<i>Patricia Lago, Joost Schalken, and Hans van Vliet</i>	
Shared Timeline and Individual Experience: Supporting Retrospective Reflection in Student Software Engineering Teams	85
<i>Birgit R. Krogstie and Monica Divitini</i>	

Session 6: Curriculum and Teaching Materials

The Role of Collaboration Diagrams in OO Software Engineering Student Projects	93
<i>Lili Hai</i>	
Toward an Approach to Programming Education to Produce Qualified Software Developers	101
<i>Jaime F. Castillo, Carlos Montes de Oca, Efraín Salomón Flores, and Perla Velasco Elizondo</i>	
Software Engineering Approach for Teaching Development of Scalable Enterprise Applications	105
<i>Ritu Arora and Sanjay Goel</i>	

Session 7: Industry-Academia Collaboration Models

Engineering a Software Supported Health Risk Appraisal Method: A Joint Effort between Academia and Health Care Industry	113
<i>Sotiris Skevoudis, Joe Campedelli, Karen Holdsworth, John Verel, and Saby Tavales</i>	
Industry Academia Collaboration: An Experience Report at a Small University	117
<i>Padmanabhan Krishnan, Kelvin Ross, and Percy Pari-Salas</i>	
A Training Process for Faculty Members in Collaborative Degree Programs: Design, Implementation and Feedback	122
<i>Gil Taran, Mario Zenha-Rela, Paulo Marques, and Pedro Bizarro</i>	

Session 8: Learning Environments and E-learning

Issues in SE E-learning Development – Changing Phases and Challenges Going Forward	130
<i>H.A. Padmini and Shakila S.R.</i>	
Web Based Software Modeling Exercises in Large-Scale Software Engineering Courses	138
<i>Birgit Demuth and Daniel Weigel</i>	
Using Wikis to Support Teamwork Skills in Software Engineering Courses	142
<i>Maha Al-Yahya</i>	
Automating an eLearning System - A Case Study	150
<i>Sridhar Chimalakonda and Kesav V. Nori</i>	

Session 9: Internships and Projects

Risks in Students' Software Projects	154
<i>Tero Ahtee and Timo Poranen</i>	
A Scalable Approach to Graduate Student Projects: Hundreds with Industry Every Year	158
<i>J. Barrie Thompson and Helen M. Edwards</i>	
Using Quality Audits to Assess Software Course Projects	162
<i>Wilson Pádua</i>	
Dimensions for Categorizing Capstone Projects	166
<i>Janet E. Burge and Gerald C. Gannod</i>	

Session 10: Education Theory and Pedagogy

Problem Based Learning in the Software Engineering Classroom	174
<i>Ita Richardson and Yvonne Delaney</i>	
Applying PBL in Software Engineering Education	182
<i>Simone C. dos Santos, Maria da Conceição Moraes Batista, Ana Paula C. Cavalcanti, Jones O. Albuquerque, and Silvio R.L. Meira</i>	
A Community of Learners Approach to Software Architecture Education	190
<i>Remco C. de Boer, Rik Farenhorst, and Hans van Vliet</i>	
Displacing the Sage on the Stage: Student Control of Learning	198
<i>Jocelyn Armarego</i>	

Session 11: Education and Training for Current SE Practice

Innovative Strategies to Build IT Workforce	202
<i>Lakshmi Prayaga, Laura J. White, and Sikha Bagui</i>	
Are Our Students Prepared for Testing Based Software Development?	210
<i>Vandana Bhattacharjee, Madhumita S. Neogi, and Rupa Mahanti</i>	
Sixteen Roles Performed by Software Engineers in First One Year	212
<i>Mallikarjun Maram, Prasad Prabhakaran, Shekhar Murthy, and Nagaraju Domala</i>	
Software Engineering Education for Bioinformatics	216
<i>Medha Umarji, Carolyn Seaman, A. Gunes Koru, and Hongfang Liu</i>	

Session 12: Education Theory and Pedagogy

Using Ontologies to Aid the Teaching of Software Engineering	224
<i>Sapna P.G. and Arunkumar Balakrishnan</i>	
Evaluating Software Inspection Cognition Levels Using Bloom's Taxonomy	232
<i>David A. McMeekin, Brian R. von Kinsky, Elizabeth Chang, and David J.A. Cooper</i>	
Pair programming as a teaching tool: a student review of empirical studies	240
<i>Pearl Brereton, Mark Turner, and Rumjit Kaur</i>	

Sessio 13: Industry-Academia Collaboration Models

A Dynamic Framework for Software Engineering Education Curriculum to Reduce the Gap between the Software Organizations and Software Educational Institutions	248
<i>GVB Subrahmanyam</i>	
Industry-Academia Collaboration via Internships	255
<i>Salaka Sivananda, Vinaya Sathyanarayana, and Peeta Basa Pati</i>	

Session 14: Education and Training for Current SE Practice

DCPE Rollout: Scaling Performance Engineering Training and Certification across a Very Large Enterprise	263
<i>Rajesh Mansharamani, Arunava Bag, Kishor Gujarathi, Kunal Gupta, Amol Khanapurkar, Manoj Nambiar, and Mehul Raval</i>	
A Global and Competition-Based Model for Fostering Technical and Soft Skills in Software Engineering Education	271
<i>Olly Gotel, Vidya Kulkarni, Moniphal Say, Christelle Scharff, and Thanwadee Sunetnanta</i>	

Tutorials

Enriching the Culture of Software Engineering Education through Theories of Knowledge and Learning	279
<i>Sanjay Goel</i>	
Software Engineering: A System Dynamics Simulated Pedagogical Practice	283
<i>Kumar Saurabh and Balasubramanian Krishnan</i>	
Innovative Teaching of Software Engineering: Practical Approach with Labs	287
<i>Suthikshn Kumar</i>	

Workshops

SWEBOK Refresh and Continuous Update: A Call for Feedback and Participation	291
<i>Pierre Bourque</i>	
The Graduate Software Engineering Reference Curriculum (GSwERC)	293
<i>David Klapholtz, James McDonald, and Arthur Pyster</i>	
Improving Communication Skills of SE Students through Curricular Innovation	295
<i>Janet E. Burge and Paul V. Anderson</i>	
An Examination of Learning Technologies That Support Software Engineering and Education	297
<i>Mel Rosso-Llopart</i>	
Multimedia Case Studies in Software Engineering: A Look at MDM CAP: A Case Authoring Platform for Education and Training	299
<i>Gil Taran, Vasudeva Varma, and Kirti Garg</i>	
How Can We Scale-Up Student Admissions and Graduate Completions?	301
<i>J. Barrie Thompson and Helen M. Edwards</i>	

Author Index