CE2016 Update (Panel Discussion)

Dr. Eric Alan Durant, Milwaukee School of Engineering

Dr. Durant is a Professor at Milwaukee School of Engineering where he serves as director of the computer engineering program. He is the IEEE-CS chair of the CE2016 Steering Committee, which is revising the joint IEEE-CS/ACM CE2004 guidelines for undergraduate computer engineering programs. He consults with Starkey Hearing Technologies on an ongoing basis specializing in DSP, beamforming, and convex optimization for hearing applications and holds two US patents.

Prof. John Impagliazzo, Hofstra University
Prof. Susan E. Conry, Clarkson University
Dr. Robert B. Reese, Mississippi State University
Prof. Herman Lam, University of Florida

Herman Lam is an Associate Professor of Electrical and Computer Engineering and the Director of the Computer Engineering undergraduate program at the University of Florida. He is also the Associate Director of CHREC, the NSF Center for High-Performance Reconfigurable Computing. He has over 25 years of research and development experience in the areas of distributed computing, service-oriented computing, database management, and most recently high-performance and reconfigurable computing. He is the co-developer of the Novo-G reconfigurable supercomputer, the most powerful reconfigurable computer in the academic world. Novo-G, containing over 400 top-of-the-line FPGAs, serves as a testbed for the study of methods and tools for the acceleration and deployment of scientifically impactful big-data applications on a scalable heterogeneous system.

Dr. Victor P. Nelson, Auburn University
Joseph L.A. Hughes, Georgia Institute of Technology

CE2016 Update
(Panel Discussion, ECE Division)

The panel will discuss the current state of the update to the 2004 document titled "Curriculum Guidelines for Undergraduate Degree Programs in Computer Engineering," also known as CE2004. The presenters are members of the steering committee leading production of the new "CE2016" document and represent the ACM and the IEEE Computer Society (IEEE-CS). They will summarize the new and refactored areas, discuss the additional focus on learning outcomes, and engage participants on ways of improving the report so that it reflects the state-of-the-art of computer engineering education and practice that is relevant for the coming decade.

Goals

The goals of this session are to present the work of the CE2016 steering committee, to solicit suggestions for improvement through audience participation, and to share results with the professional community.

Session topics

The revisions work has been underway for nearly four years and draws on a large survey of faculty and industry and several conference presentations, beginning with SIGCSE'12 and including FIE'12 through FIE'14. Topics such as information security receive much more attention in the revised document, while other topics have decreased in emphasis. The document provides a greater emphasis on defining the scope of the various CE knowledge areas (KAs) and on providing detailed learning outcomes within each knowledge unit (KU).

Agenda

0:00-0:15: Structural overview of CE2016 draft report
0:15-0:25: Overview of key areas receiving initial or significantly enhanced coverage: embedded systems, digital systems design, multicore, security, mobile and power aware, software engineering, and verification and validation of computing systems
0:25-0:35: Upcoming milestones and ways individuals can contribute to the process
0:35-1:00: Small group discussions among the audience participants: Are the revised BOK areas reflective of current and emerging practice? Is the breadth and depth of coverage in the proposed core appropriate for the coming decade?
1:00-1:15: Report feedback to all attendees
1:15-1:30: Questions and comments from audience participants

Anticipated audience

Computer engineering educators and individuals interested in computer engineering education

Expected outcomes and future work

The steering committee will incorporate the feedback gathered at this special session into the next draft of the guidelines document, which will be available for community review.

Justification

The special session format will meet the dual goals of gathering knowledge from the computer engineering community and sharing the results of the steering committee's work in progress. It is important that IEEE-CS and ACM keep the curricular guidance documents current. Therefore, audience involvement for this presentation is essential and ASEE provides an optimal venue for this important event.

References

[1] J. Impagliazzo, S. Conry, E. Durant, A. McGettrick, T. Wilson, and M. Thornton, "Special session: computer engineering review task force report," ACM Special Interest Group on Computer Science Education (SIGCSE) Conference, March 2, 2012, Raleigh, NC.

[2] E. Durant, J. Impagliazzo, S. Conry, A. McGettrick, M. Thornton, and T. Wilson, "Special session: CE2004 revisions (computer engineering curriculum guidelines)," Frontiers in Education (FIE) Conference, October 6, 2012, Seattle, WA.

[3] E. Durant, J. Impagliazzo, S. Conry, A. McGettrick, M. Thornton, and T. Wilson, "Pre-conference workshop: Computer engineering curriculum guidelines," Frontiers in Education (FIE) Conference, October 23, 2013, Oklahoma City, OK.

[4] E. Durant, J. Impagliazzo, S. Conry, R. Reese, M. Thornton, H. Lam, and V. Nelson, "Special Session: Setting the Stage for CE2016: A Revised Body of Knowledge," Frontiers in Education (FIE) Conference, October 23, 2014, Madrid, Spain.

[5] D. Soldan *et al.* "Curriculum guidelines for undergraduate degree programs in computer engineering," (CE2004). December 12, 2004. Retrieved April 14, 2013 from http://www.acm.org/education/education/curric_vols/CE-Final-Report.pdf