Association for Computing Machinery

Advancing Computing as a Science & Profession

NEWS RELEASE

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ACM AND IEEE-CS RELEASE COMPUTING CURRICULA 2020, GLOBAL GUIDELINES FOR BACCALAUREATE DEGREES IN COMPUTING

International Effort Is First Update in 15 Years

New York, NY, March 25, 2020 – The Association for Computing Machinery and the IEEE Computer Society have issued *Computing Curricula 2020 (CC2020): Paradigms for Global Computing Education* Developed by a 50-member task force drawn from 20 countries, CC2020 outlines international recommendations for baccalaureate degrees in computing.

CC2020 is designed to be comprehensive, delineating the latest curricula for computing disciplines including computer engineering, computer science, information systems, information technology, and software engineering. CC2020 builds upon a CC2005 report by including new disciplines such as cybersecurity and data science, as well as other significant "add-ons" to reflect the changing dynamics of computing, computing education research, and the workplace. These additions include:

- Transitioning from knowledge-based learning to competency-based learning
- Expanding curricular and competency diagrams and visualizations
- Establishing an interactive website that will bring CC2020 results to public use
- Charting a framework for future curricular activities

"A key theme of the CC2020 report is that students must have the requisite *knowledge* and *skills* but that their education must go beyond these important building blocks to foster *competencies*," said Alison Clear, Eastern institute of Technology (New Zealand) and Co-chair of the CC 2020 Task Force. "As today's computing landscape is constantly changing, students will need to be able to creatively solve new challenges that arise. By mastering competencies, we believe students will have the ability to meet complex demands in a variety of contexts. We envision competencies as including technical skills, but also aptitudes such as systematic thinking, collaboration, creativity, and learning by doing."

"Computing education at the baccalaureate level differs slightly from country to country, but students need to be prepared to work in a field that doesn't have national boundaries," said Allen Parrish, University of Alabama, CC2020 Task Force Co-chair. "So an important focus of this document was to outline curricula guidelines that could be adapted in countries and contexts around the world. Assembling a task force of educators and industry professionals from 20 countries helped us reach this challenging goal. We also understand that it may be some time before another global curricula report covering the full range of computing is issued. For this reason, CC2020 was designed to not only reflect the current state of computing, but to capture future trends and visions from industry, research and "grass roots" developments that will take us into the 2030s."

CC2020 also contains special features geared toward making the report accessible to a broad audience. For example, the report includes visualization tools and diagrams that show the similarities and differences between two computing disciplines for prospective students, as well as other visuals that provide a broad set of perspectives on the computing discipline. In addition, the CC2020 Task Force hopes that an accompanying interactive website will foster a useful exchange of ideas that will benefit stakeholders throughout the world.

About ACM
ACM, the Association for Computing Machinery, is the world's largest educational and scientific computing society, uniting computing educators, researchers and professionals to inspire dialogue, share resources and address the field's challenges. ACM strengthens the computing profession's collective voice through strong leadership, promotion of the highest standards, and recognition of technical excellence. ACM supports the professional growth of its members by providing opportunities for life-long learning, career development, and professional networking.

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