

Incorporating Parallel Computing in the Undergraduate Computer Science Curriculum

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Teaching parallel and distributed computing (PDC) concepts is an ongoing and pressing concern for many undergraduate educators. The ACM/IEEE CS Joint Task Force on Computing Curricula (CS2013) recommends 15 hours of PDC education in the undergraduate curriculum. Most recently, the 2019 ABET Criteria for Accrediting Computer Science requires coverage of PDC topics. For faculty who are unfamiliar with PDC, the prospect of incorporating parallel computing into their courses can seem very daunting. For example, should PDC concepts be covered in a single required course (perhaps computer systems) or be scattered throughout different courses in the undergraduate curriculum? What languages are the best/easiest for students to learn PDC? How much revision is truly needed? This Birds of a Feather session provides a platform for computing educators to discuss the common challenges they face when attempting to incorporate PDC into their curricula and share potential solutions. Chiefly, the organizers are interested in identifying “gap areas” that hinder a faculty member’s ability to integrate PDC into their undergraduate courses. The multiple viewpoints and expertise provided by the BOF leaders should lead to lively discourse and enable experienced faculty to share their strategies with those beginning to add PDC across their curricula. We anticipate that this session will be of interest to all CS faculty looking to integrate PDC into their courses and curricula.

Keywords: parallel and distributed computing; computer science education; CS2013; ABET; undergraduate curriculum

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