

Biosketch

Dean Tullsen is a professor in the Computer Science and Engineering department at UC San Diego. He received his PhD in 1996 from the University of Washington. Before that, he received his BS and MS from UCLA. His research has most typically been in the areas of multithreaded architectures, multicore architectures, and compiler optimization. He is the author of over 100 conference and journal papers, and one book. Previously, he has served as Secretary/Treasurer of IEEE TCCA, and since 2010 has been on the executive board of TCCA. He has served as general chair of ISCA, program chair of HPCA, general chair of the Federated Computing Research Conference (FCRC), and is currently chair of the steering committee for FCRC. He co-founded the ACM Transactions on Architecture and Code Optimization. He is a fellow of the IEEE and a fellow of ACM.

Position Statement

Computer architecture is at a crossroads, with unique challenges and tremendous opportunities. While many of the technological factors that helped drive generations of explosive performance scaling no longer hold, some would claim that computer architecture has become less relevant. But the opposite is true, as the burden of performance scaling and energy efficiency scaling fall more heavily on the shoulders of architects than ever before.

Just as the quality of a mountain lake depends on both the quality and quantity of fresh water that flows into it, our community needs to attract the best young people into the field. We need to be bringing them into the research community and maximizing opportunities for them to progress into top academic positions, the top research labs, and influential industry positions. We can facilitate this in a number of ways.

First, we do this by keeping our conferences vibrant, attractive, and accessible (intellectually, financially, etc.). We need to be enabling new students to attend our conferences, even when they don't have a paper or excuse to be there, to expose them to the highest levels of research and to active researchers and industry practitioners.

Second, we need to be recognizing and promoting our best young people, so the rest of the world can more easily identify them. Not all of our conferences currently recognize best papers, and we have no architecture-specific dissertation award. The HPCA best paper award is an excellent model, as it identifies not just a best paper, but also a wider set of papers that were nominated.

Third, we need to be driving the conversation of funding agencies and industry funding, exposing the challenges and opportunities of new architectural directions.

I'd like to make this a bit more concrete, and start with three initiatives. First, I'd like to increase funding for conference travel for students not presenting papers. Second, I'd like to set up a computer architecture dissertation award. Third, I'd like to establish a database of potential interns to enable industry to more directly target students with architectural interest and capabilities.