Yoo presented current techniques for seizure and epilepsy detection and treatments that are not generally effective in infants and children. Seizure patterns vary depending on the age of the patient as well as the individual patient themselves, which makes it particularly challenging to detect the patterns. Yoo emphasized that current techniques are still under development, especially for children.

After the talk, Yoo interacted closely with audience members and answered questions. In particular, he spent time talking to several Ph.D. students and their professors who are working on subject matter similar to that presented in his talk.

—Brahim Mezghani

Vivienne Sze Visits San Diego to Present on Deep-Learning Hardware

On 10 April 2018, the IEEE Solid-State Circuits Society (SSCS) Distinguished Lecturer Vivienne Sze, from the Massachusetts Institute of Technology, Cambridge, delivered the presentation “Energy-Efficient Deep Learning: Challenges and Opportunities” in San Diego, California. The event was organized by the SSCS webinar program and local IEEE SSCS Chapter (run by Tony Babaian and Jeff Shi). The afternoon seminar was hosted by Qualcomm to a crowd of 120 attendees and approximately 450 remote attendees. The comprehensive and holistic overview of this ever-so-trendy topic offered intuition for both novice and expert attendees, covering basic concepts, state-of-the-art research directions, and perspectives of what’s important for the field to progress.

Sze attributes the explosion of deep learning to the coincident availability of big data, graphics processing unit acceleration, and new machine learning techniques. She used adaptive image filtering for pattern recognition to explain basic concepts of deep neural networks (DNN). The talk then covered the underlying matrix computations and their limitations to motivate the development of specialized hardware architectures, energy-efficient data flows, joint algorithm hardware design approaches, and advanced technologies. Sze concluded with a discussion of DNN hardware benchmark metrics, such as accuracy, energy, throughput, and cost, and the importance of balancing these metrics.

This seminar will be broadcast as an SSCS webinar at a future date, an event not to be missed. Sze will take live questions immediately after the webinar. Please visit http://eyeriss.mit.edu for more information on Sze’s research and tutorial material on DNN architectures. Special thanks to Isabelle Garcia of Qualcomm for all her assistance with the seminar logistics.

—Alvin Loke