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Shaden Smith and Yang You Announced as
Recipients of 2017 ACM/IEEE-CS George Michael Memorial HPC Fellowships

NEW YORK, NY, August 29, 2017 – The Association for Computing Machinery (ACM) and the IEEE Computer Society (IEEE-CS) jointly announced today that Shaden Smith of the University of Minnesota and Yang You of the University of California, Berkeley are the recipients of the 2017 ACM/IEEE-CS George Michael Memorial HPC Fellowships. Smith is being recognized for his work on efficient and parallel large-scale sparse tensor factorization for machine learning applications. You is being recognized for his work on designing accurate, fast, and scalable machine learning algorithms on distributed systems.

Shaden Smith's research is in the general area of parallel and high performance computing with a special focus on developing algorithms for sparse tensor factorization. Sparse tensor factorization facilitates the analysis of unstructured and high dimensional data.

Smith has made several fundamental contributions that have already advanced the state of the art on sparse tensor factorization algorithms. For example, he developed serial and parallel algorithms in the area of Canonical Polyadic Decomposition (CPD) that are over five times faster than existing open source and commercial approaches. He also developed algorithms for Tucker decompositions that are up to 21 times faster and require 28 times less memory than existing algorithms. Smith's algorithms can efficiently operate on systems containing a small number of multi-core/manycore processors to systems containing tens of thousands of cores.

Yang You's research interests include scalable algorithms, parallel computing, distributed systems and machine learning. As computers increasingly use more time and energy to transfer data (i.e., communicate), the invention or identification of algorithms that reduce communication within systems is becoming increasingly essential. In well-received research papers, You has made several fundamental contributions that reduce the communications between levels of a memory hierarchy or between processors over a network.

In his most recent work, "Scaling Deep Learning on GPU and Knights Landing Clusters," You's goal is to scale up the speed of training neural networks so that networks which are relatively slow to train can be

redesigned for high performance clusters. This approach has reduced the percentage of communication from 87% to 14% and resulted in a five-fold increase in speed.

The ACM/IEEE-CS George Michael Memorial HPC (GMM) Fellowship is endowed in memory of George Michael, one of the founding fathers of the SC Conference series. The fellowship honors exceptional PhD students throughout the world whose research focus is on high performance computing applications, networking, storage or large-scale data analytics using the most powerful computers that are currently available. The Fellowship includes a $5,000 honorarium and travel expenses to attend SC17 in Denver Colorado, November 12-17, 2017, where the GMM Fellowships will be formally presented.

About ACM

ACM, the Association for Computing Machinery **www.acm.org**, 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.

About IEEE Computer Society

IEEE Computer Society, **www.computer.org**, is one of the world's leading computing membership organizations and a trusted information and career-development source for a global workforce of technology leaders including: professors, researchers, software engineers, IT professionals, employers, and students. IEEE Computer Society provides high-quality, state-of-the-art information on an on-demand basis. The Computer Society provides a wide range of forums for top minds to come together, including technical conferences, publications, a comprehensive digital library, unique training webinars, and professional training. IEEE is the world's largest professional association for advancement of technology and the Computer Society is the largest society within IEEE.

About SC17

SC17, the International Conference for High Performance Computing, **sc17.supercomputing.org**, sponsored by ACM and IEEE-CS offers a complete technical education program and exhibition to showcase the many ways high performance computing, networking, storage and analysis lead to advances in scientific discovery, research, education and commerce. This premier international conference includes a globally attended technical program, workshops, tutorials, a world class exhibit area, demonstrations and opportunities for hands-on learning.

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