Department of Computer and Information Sciences
Spring 2023 Colloquium

Distinguished Lecture

An Overview of High Performance Computing and Future Requirements

Jack Dongarra, 2021 Turing Laureate
The University of Tennessee, Oak Ridge National Laboratory, and University of Manchester

Abstract: In this talk we examine how high performance computing has changed over the last ten years and look toward the future in terms of trends. These changes have had and will continue to impact our numerical scientific software significantly. A new generation of software libraries and algorithms are needed for the effective and reliable use of (wide area) dynamic, distributed, and parallel environments. Some of the software and algorithm challenges have already been encountered, such as management of communication and memory hierarchies through a combination of compile-time and run-time techniques, but the increased scale of computation, depth of memory hierarchies, range of latencies, and increased run-time environment variability will make these problems much harder.

Bio: Jack Dongarra specializes in numerical algorithms in linear algebra, parallel computing, the use of advanced computer architectures, programming methodology, and tools for parallel computers. He holds appointments at the University of Manchester, Oak Ridge National Laboratory, and the University of Tennessee, where he founded the Innovative Computing Laboratory. In 2019 he received the ACM/SIAM Computational Science and Engineering Prize. In 2020 he received the IEEE-CS Computer Pioneer Award. He is a Fellow of the AAAS, ACM, IEEE, and SIAM; a foreign member of the British Royal Society and a member of the US National Academy of Engineering. Most recently, he received the 2021 ACM A.M. Turing Award for his pioneering contributions to numerical algorithms and software that have driven decades of extraordinary progress in computing performance and applications.

EVENT DETAILS

DATE:
Monday, May. 1 2023

TIME:
10:30 AM – 12:00 PM

LOCATION:
Gladfelter 107

RECEPTION:
12:00 PM – 12:30 PM
At SERC Mezzanine

ATTENDANCE:
Open to all

RSVP:
bit.ly/cis-distinguished-2023

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