Seminar

ECU COMPUTER SCIENCE

Its Different, But Is It Better?

Abstract. In the past few years, Moore's Law has gradually approached its end, forcing chip designers to move away from process scaling and instead look to computer architecture for improved performance. At the same time, the demand for machine learning has exploded and graph analytics have expanded. These trends have led to a proliferation of new, novel computer architectures that depart from the traditional CPU or GPU. These systems are less general, more targeted, and typically cannot run existing software without significant code and algorithm development. But are these new approaches and systems actually more performant than the traditional HPC cluster? Will a costly software refactoring and algorithm development effort be justified by significant performance gains on these systems? Can we justify the expense of purchasing a novel system based on vague claims from the vendor?

Biography. Dr. Marcel Fallet is a STEM Technical Leader at the National Security Agency, specializing in high performance computing (HPC). A chemist at heart, Dr. Fallet's eclectic career has granted him experience as a computational simulation researcher, as well as a technical leader for large scale system design, production, delivery, and support. Dr. Fallet received his Master's Degree in chemistry from Northwestern University in 2007, and his Ph. D in computational chemistry from Clemson University in 2013. Prior to joining the NSA, Dr. Fallet was a Research Assistant Professor at the United States Naval Academy, working to advance the state of the art in tribological simulations using molecular dynamics code..

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Friday November 12, 2021
Time: 2:00 – 2:50pm

Online via
Microsoft Teams