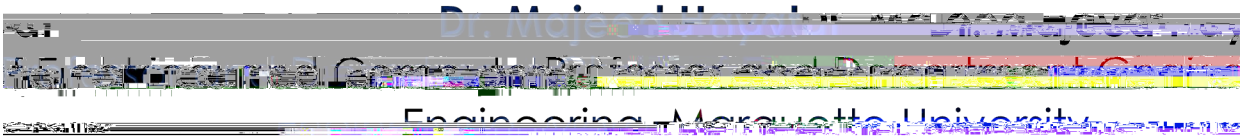
A Probabilistic Model to Predict the Impact of Rare and Colossal Interference in HPC Systems

Tuesday, February 27, 2024
2:00 pm – 3:00 pm
Olin 202

Reception to follow in Olin 204
3:00 pm – 3:30 pm



ABSTRACT Understanding and predicting the performance of HPC applications are crucial for their performance optimization through task scheduling and load balancing. However, optimizing the HPC application is usually a challenging task in the presence of rare and colossal interference, which causes major slowdowns. Interference is caused by interaction between the HPC application and other system activities or other applications. Such interference impedes the application's performance especially if it occurs rarely (low frequency) yet over long durations. The performance of the HPC application is usually assessed using the interval length, which is determined by the maximum . In particular, they fa accurately predict the mean interval length at scale, there and predict its impact on the

application's performa is approach using synthetic HP well as a case study from a production HPC system. The estimates the interval-length characteristics at scale

BIOGRAPHY: Dr. Haya received his Bachelor of Science (summa cum laude) in Electrical Engineering from the University of the Pacific (in S in resilience and reliability of interdependent cyber-physical systems, dynamical modeling of cascading phenomena with applications to resilient power systems, avalanche photodiodes, statistical communication theory,