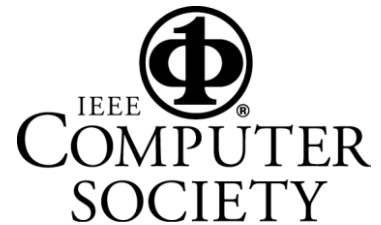


PRINCETON ACM / IEEE-CS CHAPTERS
NOVEMBER 2021 JOINT MEETING

Graphical Models and Logical Abstractions for Quantum Systems



Everyone is talking about quantum computing, one of today's most interesting computation models.

Quantum computers now have the size and reliability to allow more widespread experimentation and educational outreach. With more research and students using quantum computers, a natural question lies in how to simulate, reason about, and debug quantum programs and circuits. Probabilistic graphical models such as Bayesian networks offer a natural description of a quantum computer's quantum states and probabilistic noise. This talk will discuss a case study presented at ASPLOS 2021 in simulating variational algorithms. The talk will also explain some extensions for modeling correlated noise and higher-dimensional quantum states.

Yipeng Huang joined Rutgers University as an assistant professor in 2020. His research and teaching are in quantum computing and emerging computer architectures. He is interested in quantum computer systems: how to program them, simulate them, and debug them. His research has previously been supported by a DARPA STTR grant, and his work had been cited among IEEE MICRO top picks. Prior to joining Rutgers, Yipeng was a postdoc at Princeton University with Dr. Margaret Martonosi, and he was a PhD student at Columbia University with Dr. Simha Sethumadhavan.

Date: Thursday, November 18, 2021, 8:00pm
Place: ONLINE MEETING – registration required
How to register:
• Send email to PrincetonACM@gmail.com
• OR Register on Meetup.com (http://meetup.com/IEEE-Princeton-Central-Jersey-Section)
Information: Dennis Mancl (908) 285-1066
On-line info: http://PrincetonACM.acm.org

All Princeton ACM / IEEE-CS meetings for fall/winter 2021-22 will be held “on-line”. When you register for the meeting, you will receive an email with instructions for how to connect to the talk.

All Princeton ACM / IEEE-CS meetings are open to the public. Students and their parents are welcome. There is no admission charge.