Pengfei Su

Assistant Professor
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Education

- **College of William & Mary** — Williamsburg, VA
  Ph.D. in Computer Science — *Aug 2016 - Jan 2021*
  Advisor: Xu Liu
- **Institute of Computing Technology, Chinese Academy of Sciences** — Beijing, China
  M.S. in Computer Science — *Aug 2013 - Jul 2016*
- **Yunnan University** — Yunnan, China
  B.E. in Network Engineering — *Aug 2009 - Jul 2013*

Work Experiences

- **UC Merced** — Merced, CA
  Assistant Professor — *Jan 2021- Present*
- **Meta** — Menlo Park, CA
  Research Engineer — *May 2020- Nov 2020*
- **Uber** — Palo Alto, CA
  Software Engineering Intern — *May 2019 - Aug 2019*

Research Interests

- **Programming Languages**
- **Static and Dynamic Program Analysis**
- **High-performance/Parallel Computing**
- **Machine Learning Systems**

Publications

- [**TACO'23**] "MicroProf: Code-level Attribution of Unnecessary Data Transfer in Microservice Applications", Syed Salauddin Mohammad Tariq, Lance Menard, **Pengfei Su**, Probir Roy. ACM Transactions on Architecture and Code Optimization, Aug 2023. Original Work
- [**HIPS'23**] "Designing Secure Performance Metrics for Last-Level Cache", Probir Roy, Birhanu Eshete, **Pengfei Su**. The 28th International Workshop on High-Level Parallel Programming Models and Supportive Environments, May 15, 2023, Petersburg, FL, USA.
- [**ASPLOS'23**] "DrGPUM: Guiding Memory Optimization for GPU-accelerated Applications", Mao Lin, Keren Zhou, **Pengfei Su**. The 28th International Conference on Architectural Support for Programming Languages and Operating Systems, Mar 25-29, 2023, Vancouver, BC, Canada.
- [**CGO'23**] "DJXPerf: Identifying Memory Inefficiencies via Object-centric Profiling for Java", Bolun Li, **Pengfei Su**, Milind Chabbi, Shuyin Jiao, Xu Liu. The IEEE/ACM International Symposium on Code Generation and Optimization, Feb 25-Mar 1, 2023, Montreal, QC, Canada.

- **[PyTorch Conference'22]** "Poster: Squeezing GPU Memory Usage in PyTorch", Mao Lin, Keren Zhou, **Pengfei Su**.
- **[ICSE'22]** "OJXPerf: Featherlight Object Replica Detection for Java Programs", Bolun Li, Hao Xu, Qidong Zhao, **Pengfei Su**, Milind Chabbi, Shuyin Jiao, Xu Liu. The 44th IEEE/ACM International Conference on Software Engineering, May 8-27, 2022, Pittsburgh, PA, USA.
- **[SC'19]** "Pinpointing Performance Inefficiencies via Lightweight Variance Profiling", **Pengfei Su**, Shuyin Jiao, Milind Chabbi, Xu Liu, The International Conference for High Performance Computing, Networking, Storage and Analysis, Nov 17-22, 2019, Denver, CO, USA.
- **[ESEC/FSE'19]** "Pinpointing Performance Inefficiencies in Java", **Pengfei Su**, Qingsen Wang, Milind Chabbi, Xu Liu, The 27th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering, Aug 26 - 30, 2019, Tallinn, Estonia.
- **[ICSE'19]** "Redundant Loads: A Software Inefficiency Indicator", **Pengfei Su**, Shasha Wen, Hailong Yang, Milind Chabbi, Xu Liu, The 41st IEEE/ACM International Conference on Software Engineering, May 25 - Jun 1, 2019, Montreal, Canada. ACM SIGSOFT Distinguished Paper Award
- **[PPoPP'19]** "Lightweight Hardware Transactional Memory Profiling", Qingsen Wang, **Pengfei Su**, Milind Chabbi, Xu Liu, The 24th ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming, Feb 16-20, 2019, Washington, D.C.. Best Paper Award

Honors and Awards

- Stephen K.Park Graduate Research Award, William & Mary 2020
- ACM SIGSOFT Travel Grant, ESEC/FSE'19 2019
- Distinguished Paper Award, ICSE'19 2019
- Best Paper Award, PPoPP'19 2019
- ACM SIGPLAN Travel Grant, PPoPP'19 2019
- NSF Travel Grant, PPoPP'19 2019
- Outstanding Student Award (Top 5%), Chinese Academy of Sciences 2014/2015
- Outstanding Student Award (Top 3%), Yunnan University, China 2010/2011/2012

Grants

- **[NSF'21]** "Collaborative Research: CNS Core: SMALL: DrGPU: Optimizing GPU Programs via Novel Profiling Techniques", PI, $249,985
- **[NSF'23]** "IUCRC Preliminary Proposal Planning Grant UC Merced: Center for Memory System Research (CEMSYS)", Co-PI, $20,000
- **[UC Merced]** Academic Senate Faculty Grant, Sole PI, $5,000

Professional Services

- Organization Committee CLUSTER'21 (session chair), HDIS'21 (session chair)
- Program Committee PPoPP'24 (ERC), IPDPS'23, CLUSTER'23, ICPADS'22, HIPS'21, LCTES'21
- Artifact Evaluation Committee ASPLOS'20, CGO'18/19/20, PPoPP'18/19/21
- Conference Reviewer CLUSTER'21, HPCA'20, CGO'20, IPDPS'20, BIGCOM'19, ICPP'17/19/20, HIPS'17

- Journal Reviewer — TECS
- Conference Volunteer — ASPLOS'18

University Services

- CSE Undergraduate Committee — 2021 - Present
- CSE Faculty Search Committee — 2021 - 2022, 2022 - 2023

Teaching

- **UC Merced** — Merced, CA
  Instructor for Introduction to Object-orientated Programming (CSE165) — *Fall 2021/2022*
- **UC Merced** — Merced, CA
  Instructor for Compiler Construction (EECS254) — *Spring 2022/2023*
- **College of William & Mary** — Williamsburg, VA
  Teaching Assistant for Principles of Programming Languages (CSCI312) — *Spring 2018, Fall 2017*
- **College of William & Mary** — Williamsburg, VA
  Teaching Assistant for Algorithms (CSCI303) — *Spring 2017, Fall 2016*

Students

- Yuanzhou Yang (Ph.D. student) — *Aug 2021 - Dec 2022*
- Mao Lin (Ph.D. student) — *Aug 2021 - Present*
- Tahea Hossain (Undergraduate) — *Summer 2021*