Peng Kang

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Research Interests

- **Cloud/Edge Computing, Operating System, and Applied AI for System**

Working Experience

- **California State University, Sacramento** *08/2024 - Now*
  Assistant Professor (Tenure-Track) of Computer Science
- **Google, Pittsburgh** *05/2022 - 08/2022*
  Software Engineer Intern
- **Jianxun Culture, Shanghai** *01/2018 - 07/2018*
  Software Development Engineer
- **Baidu, Beijing** *10/2016 - 04/2017*
  Site Reliability Engineer

Education

- **The University of Texas at San Antonio** *2018 - 2024*
  Ph.D. in Computer Science *Supervisor: Dr. Palden Lama*
  Dissertation: *SLO-Aware Resource Management for Edge Computing*
- **The University of Texas at San Antonio** *2023*
  M.S. in Computer Science
- **Xi'an Microelectronic Technology Institute** *2013 - 2016*
  M.S. in Computer Science *Supervisor: Prof. Xubang Shen*
  Thesis: *Research on high reliability embedded real-time operating system*
- **Nanjing University of Aeronautics and Astronautics** *2009 - 2013*
  B.S. in Electrical Engineering

Publications

Conference Publications

- Data-priority Aware Fair Task Scheduling for Stream Processing at the Edge (**Selected as the best paper**).
  Faiza Akram, **Peng Kang**, Palden Lama, Samee U. Khan
  In *the 8th IEEE Cloud Summit, Washington, DC, USA*, 2024.
- Enhanced Converting Autoencoder based Framework for Low-latency Energy-efficient DNN.
  Hasanul Mahmud, **Peng Kang**, Kevin Desai, Palden Lama and Sushil Prasad
  In *the 8th IEEE Cloud Summit, Washington, DC, USA*, 2024.
- High-throughput Real-time Edge Stream Processing with Topology-Aware Resource Matching.
  Peng Kang, Samee U. Khan, Xiaobo Zhou, and Palden Lama
  In *the 24nd IEEE International Symposium on Cluster, Cloud and Internet Computing (CCGrid)*, 2024.
- A Converting Autoencoder Toward Low-latency and Energy-efficient DNN Inference at the Edge.
  Hasanul Mahmud, **Peng Kang**, Kevin Desai, Palden Lama and Sushil Prasad
  In the *6th Workshop on Parallel AI and Systems for the Edge (PAISE)*, 2024.

- Some New Observations on SLO-aware Edge Stream Processing.
  Amna Shahid, **Peng Kang**, Palden Lama, and Samee U. Khan
  In *IEEE Cloud Summit* 2023.
- Kneescale: Efficient Resource Scaling for Serverless Computing at the Edge.
  Xue Li, **Peng Kang**, Jordan Molone, Wei Wang, and Palden Lama
  In *the 22nd IEEE International Symposium on Cluster, Cloud and Internet Computing (CCGrid)*, 2022.
- SLO-Aware Virtual Rebalancing for Edge Stream Processing.
  Peng Kang, Palden Lama, and Samee U. Khan
  In *the 9th IEEE International Conference on Cloud Engineering (IC2E)*, 2021.
- Robust Resource Scaling of Containerized Microservices with Probabilistic Machine Learning.
  Peng Kang and Palden Lama
  In *the 13th IEEE/ACM International Conference on Utility and Cloud Computing (UCC)*, 2020.

Journal Publications

- Multicore embedded real-time scheduling algorithm based on gang scheduling.
  Peng Kang, Congxiu Liu, and Xubang Shen
  Microelectronics and Computer, 2016.

Awards & Honors

- IEEE Cloud Summit (Best Paper Award) *2024*
- Graduate Student Professional Development Award, UTSA *2024*
- Who's Who, UTSA *2022*
- Alvarez Research Competitive Scholarship, UTSA *2021*
- Phi Kappa Phi, Honor Society *2020*
- National High School Mathematics League (Gansu, China) *2008*

Research & Education Grants

- McNamee Fund, CSUS *2024*
- CCGrid travel grant, NSF *2024*
- NSDI Student Grant, NSDI *2021*

Teaching Experience

California State University, Sacramento

- **CSC 239 Advanced Operating Systems Principles And Design** *Lecturer*
  Fal 2025
- **CSC 139 Operating System Principles** *Lecturer*
  Sum 2025
- **CSC/CPE 159 Operating System Pragmatics** *Lecturer*
  Fal 2025, Spr 2025, Fal 2024
- **CSC 190 Senior Project I** *Lab Advisor*
  Fal 2025, Spr 2025, Fal 2024

The Unversity of Texas at San Antonio

- **CS 4613 Senior Design** *Teaching Assistant*
  Spg 2024
- **CS 4843/5573 Cloud Computing** *Teaching Assistant*
  Fal 2022, Spg 2023, Spg 2024
- **CS 3423 System Programming Lab Recitation** *Lecturer*
  Fal 2019
- **CS 3843 Computer Organization Lab Recitation** *Lecturer*
  Sum 2019
- **CS 3733 Operating System** *Teaching Assistant*
  Fal 2018

Research and Education Grants

- **StreamlessEdgeOrch: Semi-decentralized Serverless Edge Stream processing at the Edge Network,**
  PI, Peng Kang, 20,000 (SUs), ChameleonCloud, 01/2025-07/2025
- **Improving Operating Systems education using cloud-hosted VMs,**
  PI, Peng Kang, 20,000 (SUs), ChameleonCloud, 09/2025-04/2026

Professional Services & Activities

Reviewer

- IEEE Cloud Summit *2025*
- ACM Transactions on Internet Technology (TOIT) *2025*
- Sprinter Nature: Automated Software Engineering (ASE) *2025*
- IEEE International Conference on Data Mining (ICDM) *2024*
- IEEE Transactions on Network Science and Engineering (TNSE) *2023*
- IEEE International Conference on Communications (ICC) *2022*

Web master

- IEEE Computer Society Technical Committee on Distributed Processing *2020 - 2024*

Session Chair

- IEEE International Symposium on Cluster, Cloud and Internet Computing *2024*

Professional Memberships

- IEEE Member *2019 - Now*
- California Faculty Association *2024 - Now*
- California State Library *2024 - Now*

Mentoring

- **Pravallika Dharmavarapu** *Master Student*
  Project: *Mood-Based Food Recommendation System Using Multimodal Analysis.* *02/2025 - now*

- **Illya Gordyy** *Undergraduate Student*
  Project: *Enabling Memory Virtualization and Protection for CSC 159 Operating System Pragmatics.* *10/2024 - 05/2025*

- **Alexander Oswalt** *Master Student*
  Project: *GPU Virtualization with QEMU.* *01/2025 - now*
- **Faiza Akram** *PhD Student*
  Project: *Explore data distribution at edge stream processing.* *05/2023 - 06/2024*
- **Amna Shahid** *Master Student (Graduated)*
  Project: *Observation of data priority at edge stream processing.* *06/2022 - 08/2023*

Certificates

- 2024 NSF AI Spring School
- Google Project Management
- Google IT Automation with Python

Presentations and Talks

- **CCGRID** *2024*
  High-throughput Real-time Edge Stream Processing with TopologyAware Resource Matching
- **IC2E** *2021*
  SLO-Aware Virtual Rebalancing for Edge Stream Processing
- **UCC** *2020*
  Robust Resource Scaling of Containerized Microservices with Probabilistic Machine Learning