KEHAN WANG

(510) 345-7113 ◇ Sunnyvale, CA 94085
wang.kehan@berkeley.edu ◇ linkedin.com/in/wang-kehan ◇ jason-khan.github.io

EDUCATION

Master of Science in Electrical Engineering and Computer Science Aug 2021 - May 2022
University of California, Berkeley GPA: 3.91/4.0

Bachelor of Arts in Computer Science Aug 2017 - Aug 2021
University of California, Berkeley GPA 4.0/4.0

WORK EXPERIENCE

Senior Software Engineer June 2022 - Now
Google *Mountain View, CA*

- Lead conversion value modeling for Discover Ads, leveraging large-scale deep learning to optimize auto-bidding.
- Develop state-of-the-art ML optimization and neural network architectures to predict high-variance conversion values, managing the end-to-end lifecycle from offline experimentation to production deployment.

Research Intern May 2021 - Aug 2021
Coohom *Hangzhou, China*

- Worked on research project and published "Neural Face Identification in 2D Wireframe Projection".

Software Engineer Intern May 2020 - Aug 2020
Microsoft *Redmond, WA*

- Worked on Microsoft Teams team collaboration platform, developing full-stack features.

Software Engineer Intern May 2019 - Aug 2019
Brilliant Home Technology *San Mateo, CA*

- Develop new features on Brilliant Smart Home control panel and mobile app, which connect all smart home devices together and let users control everything from one place.

RESEARCH PROJECTS

Neural Face Identification in 2D Wireframe Projection Coohom Hangzhou, 2021

- Propose a Transformer-based model to find face loops in 2D line drawings.
- Formulate face identification as a seq2seq problem. Existing methods use various heuristic searches.
- Use co-edge to give our model a stronger prior and achieve $> 90\%$ recall and precision in face detection.
- Reconstruct 3D model from the 2D line drawing using the predicted face loops.

Multi-modal Misinformation Detection Video and Image Processing Lab UC Berkeley, 2021

- Detect if a social media post's text description matches with its video content.
- Construct mismatches through pairing a video with randomly selected post text.
- Experiment with both contrastive learning and Masked-language Modeling given video.
- Both approaches achieve $> 90\%$ accuracy on collected Twitter dataset.

Y-Net Barcode Segmentation BAIR UC Berkeley, 2020

- Segmentation of small barcodes in a large image is computationally challenging because of the large area of background present. Existing methods are too slow and inefficient.
- Developed a pipeline with Regional Proposal Network and a new ConvNet architecture (Y-Net) to classify barcodes, and generate segmentation results using bounding boxes methods from OpenCV.

Wavelet: Efficient DNN Training RISE Lab UC Berkeley, 2020

- GPU memory usage has peaks and valleys during training. Existing methods schedules trainings synchronously.
- Developed Wavelet, an efficient tick-tock scheduling method for DNN training. By interleaving different GPU's peaks and valleys, our distributed training model can achieve up to 6.7x speedup.

SensAI Robotics RISE Lab UC Berkeley, 2020

- Model Predictive Control (MPC) is a powerful control method. However, solving it iteratively in real time is slow for low-end machines such as on-drone processors.
- Developed a provably efficient, stable and robust imitated MPC by distributing a drone's central controller work onto four individual propellers using imitation learning.

Integrated Dynamic Transit Operation Systems California PATH UC Berkeley, 2018

- Developed PathTransit, a public transit app that supports bus-user location matching for transit services.
- Created an algorithm that classifies if a passenger is on the bus, given sparse GPS data from passenger and bus.

TEACHING EXPERIENCE

Lab Assistant EE16A/B: Designing Information Devices & Systems I/II Jan 2018 - May 2019
University of California, Berkeley *Berkeley, CA*

PUBLICATION

- F. Wu, G. Wang, S. Zhuang, K. Wang, A. Keimer and I. Stoica, "Composing MPC with LQR and neural network for amortized efficiency and stable control", in IEEE Transactions on Automation Science and Engineering, vol. 21, no. 2, pp. 2088-2101, April 2024, doi: 10.1109/TASE.2023.3259428.
- K. Wang, S. Z. Zhao, D. Chan, A. Zakhor and J. Canny, "Multimodal Semantic Mismatch Detection in Social Media Posts," 2022 IEEE 24th International Workshop on Multimedia Signal Processing (MMSP), Shanghai, China, 2022, pp. 1-6, doi: 10.1109/MMSP55362.2022.9949462.
- K. Wang, J. Zheng and Z. Zhou, "Neural Face Identification in a 2D Wireframe Projection of a Manifold Object," 2022 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), New Orleans, LA, USA, 2022, pp. 1612-1621, doi: 10.1109/CVPR52688.2022.00167.
- S. McCrae, K. Wang, A. Zakhor, "Multi-Modal Semantic Inconsistency Detection in Social Media News Posts", 28th International Conference on Multimedia Modeling(MMM), April 2022, Vietnam
- G. Wang, K. Wang, K. Jiang, X. Li, I. Stoica, "Wavelet: Efficient DNN Training with Tick-Tock Scheduling", Fourth Conference on Machine Learning and Systems (MLSys), April 2021, USA
- J. Quenum, K. Wang, A. Zakhor, "Fast, Accurate Barcode Detection in Ultra High-Resolution Images", 28th IEEE International Conference on Image Processing (ICIP), September 2021, USA

AWARD & HONOR

1st Place Winner, Cal Hacks 5.0 Nov 2018
36-hour hackathon with ∼2000 hackers, ∼250 teams. *Berkeley, CA*

- Won first place with Navii, an AR mobile app for indoor navigation.

EXTRACURRICULAR ACTIVITIES

Industrial Relations Chair
Upsilon Pi Epsilon *Berkeley, CA*

- UPE is a Computer Science Honor Society for top 30% of Computer Science major. Industrial Relations committee manages its relations to both the EECS department and our partner companies.