KAI WEN WANG

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EDUCATION

Carnegie Mellon University, Pittsburgh, PA   Dec 2019

- Bachelor of Science in Computer Science with an additional major in Mathematics
- Selected Coursework: Machine Learning[G], Algorithms and Data Structures, Operating Systems, Distributed Systems, Real Analysis, Convex Geometry[G], Probability, Graph Theory, Combinatorics
- Graduated with University Honors, Cumulative GPA: 3.96/4.00   G - graduate

RESEARCH EXPERIENCE

Research Assistant, Professor Mahadev Satyanarayanan (Satya)   Sept 2019 - Dec 2019
Computer Science Department, Carnegie Mellon University, Pittsburgh, PA

- Developed Hyperboard for Eureka to track, visualize and improve user productivity with edge computing. Hyperboard tracks several metrics and enables branching from and replaying previous sessions.

Research Assistant, Professor Nina Balcan   Dec 2018 - Jan 2020
Machine Learning Department, Carnegie Mellon University, Pittsburgh, PA

- Co-developed the first provably accurate algorithms for learning distributed, differentially private decision trees. Performed comprehensive evaluation on real datasets.

Research Assistant, Professor Min Xu   Jan 2017 - Aug 2018
Computational Biology Department, Carnegie Mellon University, Pittsburgh, PA

- Developed a Monte Carlo approach for performing hypothesis tests on CECT template matching.
- Implemented novel generative adversarial networks for 3D structures of macromolecular complexes.

INDUSTRY EXPERIENCE

Software Engineer, Facebook AI Applied Research (FAIAR)   Jan 2020 - Present
Facebook Inc., Menlo Park, CA

- Building Applied RL Platform (ReAgent) at Facebook for AI Personalization. Open-sourced link: https://github.com/facebookresearch/ReAgent.

Research Engineering Intern, Facebook AI Research (FAIR)   May 2019 - Aug 2019
Facebook Inc., Menlo Park, CA

- Co-developed scalable backbone platform for RL research at FAIR, including high-quality implementations of Ape-X and R2D2. Open-sourced at https://github.com/facebookresearch/rela.

Research Intern, Datavisor Inc.   May 2018 - Aug 2018
DataVisor Inc., Mountain View, CA

- Designed and implemented an automated quality monitoring algorithm for company metrics using seasonal trend decomposition based on Loess (STL). Deployed as Web app using Express and D3.

PROJECTS

Cosmological Event Classifier, Prof. Chad Schafer (10-701 project)   Mar 2018 - May 2018
Department of Statistics, Carnegie Mellon University, Pittsburgh, PA

- Developed classifier for cosmological events with 90% accuracy. Available dataset was severely biased and small, comprising of irregularly sampled magnitudes time-series data from synoptic sky surveys.

First Place at CMU's Annual Mobot Race   Apr 2018, Apr 2019
School of Computer Science, Carnegie Mellon University, Pittsburgh, PA

- Built autonomous mobile robot (a.k.a. Mobot) capable of outdoors navigation.
- First place at 24th and 25th annual Mobot Race with fastest time for the past six years.

Co-author for Honors Probability Course Textbook   May 2018
Mathematical Sciences Department, Carnegie Mellon University, Pittsburgh, PA

- Prepared course textbook for honors probability course (21-325) with Professor Tomasz Tkocz.
- Now used for the class: `http://www.math.cmu.edu/~ttkocz/teaching/1819/prob-notes.pdf`.

TEACHING

Teaching Assistant for 15-440/640 Distributed Systems   Jan 2019 - May 2019
Computer Science Department, Carnegie Mellon University, Pittsburgh, PA

- Led recitation, held weekly office hours, created and graded homework and exam questions for CMU's Distributed Systems, a class of over 200 students, taught by Professors Satya, Pillai and Berger.

Grader for Concepts of Math   Jan 2017 - May 2017
Mathematical Sciences Department, Carnegie Mellon University, Pittsburgh, PA

- Graded homeworks and exams for Concepts of Math (21-127) taught by Professor Greggory Johnson.

HONORS

- Honorable Mention for CRA Outstanding Undergraduate Researcher Award 2020.
- First place in CMU's annual Mobot Race 2018, 2019.
- Summer Undergraduate Research Fellowship 2017.
- First-year Advisory Board for CIT 2016-2017.

PUBLICATIONS

- **Kai Wen Wang**, Travis Dick, and Nina Balcan, "Scalable and provably accurate algorithms for differentially private distributed decision tree learning", in *AAAI Workshop on Privacy-Preserving Artificial Intelligence @ AAAI-20* (**Oral**, 20% acceptance).
- **Kai Wen Wang**, Xiangrui Zeng, Xiaodan Liang, Zhiguang Huo, Eric P. Xing, Min Xu, "Image-derived generative modeling of pseudo-macromolecular structures — towards statistical assessment of electron cryotomography template matching", in BMVC 2018.
- Guannan Zhao, Bo Zhou, **Kai Wen Wang**, Rui Jiang, Min Xu, "Respond-CAM: Analyzing deep models for 3D imaging data by visualizations", in MICCAI 2018.
- Chang Liu, Xiangrui Zeng, **Kai Wen Wang**, Qiang Guo, Min Xu, "Multi-task Learning for Macromolecule Classification, Segmentation and Coarse Structural Recovery in Cryo-Tomography", in BMVC 2018.