Jared Hwang

Curriculum Vitae: Updated Sep 2023

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Education

University of Southern California, Los Angeles, CA — Jun 2021 – Aug 2023
M.S. Computer Science
GPA: 4.00, Honors Program

Tufts University, Medford, MA — Aug 2016 – May 2020
B.S. Physics, B.S. Computer Science
GPA: 3.94, summa cum laude, Sigma Pi Sigma Honor Society

Research Experience

Research Internship: Digital Typhoon — Jan 2023 – Aug 2023
National Institute of Informatics (NII), Tokyo, Japan
Supervisor: Prof. Asanobu Kitamoto
Designed and built Pyphoon2, a dataloader for the Digital Typhoon Dataset. Coordinated and ran ML benchmark experiments, including classification, regression, and forecasting of typhoon intensity. Work submitted to NeuRIPS 2023. [Web] [Code]

Research Assistant: LArTPC — May 2020 – Sep 2021
Tufts University, Medford, MA
Supervisor: Asst. Prof. Taritree Wongjirad
Designed and ran ML experiments on neutrino detector image datasets. Created autoencoder based image compression model, producing 80% smaller filesizes compared to JPEG. Prototyped spatial loss algorithm for detector image segmentation.

Research Assistant: IsoDAR — Jun 2018 – Mar 2020
Massachusetts Institute of Technology (MIT), Cambridge, MA
Supervisor: Prof. Janet Conrad
Developed a particle accelerator simulation code for radio frequency quadrupoles (RFQ). Ran simulations with greater accuracy and 20% faster than competing solutions. Included visualization and parallel computing capability. [Code]

Research Assistant — Sep 2017 – May 2018
Tufts University, Medford, MA
Supervisor: Assoc. Prof. Anna Sajina
Performed statistical analysis and crossmatching of two satellite datasets.

Publications

[in review] Digital Typhoon: Long-term Satellite Image Dataset for the Spatio-Temporal Modeling of Tropical Cyclones — Sep 2023
Asanobu Kitamoto, **Jared Hwang**, Bastien Vuillod, Lucas Gautier.
NeuRIPS – *Conference on Neural Information Processing Systems, 2023.*

Talks

Machine Learning for the Digital Typhoon Dataset — Jun 2023
Yokohama National University (YNU), Yokohama, Japan
Fujitsu & YNU Typhoon Research Lab Joint Research Workshop

Honors

N. Hobbs Knight Prize Scholarship — May 2020
Tufts University, Medford, MA
For demonstrating outstanding ability in theoretical and experimental physics.

Work Experience

Software Development Engineer Internship — May 2022 – Aug 2022
Amazon, Seattle, WA
Integrated Apache Airflow workflow orchestrator for team ML pipelines.

Teaching

Graduate Teaching Assistant

USC CSCI576: Multimedia Systems Design — Sep 2022 – Dec 2022
~200 students. Wrote exam and homework questions. Graded exams and assignments. Held office hours.

Undergraduate Teaching Assistant

Tufts COMP105: Programming Languages — Jan 2020 – May 2020
~100 students. Graded exams and assignments. Held office hours.

Tufts COMP40: Machine Structure and Assembly Language Programming — Sep 2018 – Jan 2020
~120 students. Graded exams and assignments. Held office hours.

Other Projects

Simulation Inference on Urban Traffic Data — Nov 2021 – Dec 2021
University of Southern California, Los Angeles, CA
Applied Bayesian conditional density estimation simulation inference to traffic simulations of the Seattle area. [Web]

Technical Skills

Programming
Python, C++, C, Java, JavaScript, SQL

Machine Learning & Development
PyTorch, Tensorflow, PyTorch Lightning, Apache Airflow, Docker

Language
Conversational Mandarin, Conversational Japanese