

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 file sizes 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	<p>[in review] Digital Typhoon: Long-term Satellite Image Dataset for the Spatio-Temporal Modeling of Tropical Cyclones Asanobu Kitamoto, Jared Hwang, Bastien Vuillod, Lucas Gautier. <i>NeuRIPS – Conference on Neural Information Processing Systems, 2023.</i></p>	Sep 2023
Talks	<p>Machine Learning for the Digital Typhoon Dataset Yokohama National University (YNU), Yokohama, Japan <i>Fujitsu & YNU Typhoon Research Lab Joint Research Workshop</i></p>	Jun 2023
Honors	<p>N. Hobbs Knight Prize Scholarship Tufts University, Medford, MA <i>For demonstrating outstanding ability in theoretical and experimental physics.</i></p>	May 2020
Work Experience	<p>Software Development Engineer Internship Amazon, Seattle, WA Integrated Apache Airflow workflow orchestrator for team ML pipelines.</p>	May 2022 – Aug 2022
Teaching	<p>Graduate Teaching Assistant USC CSCI576: Multimedia Systems Design ~200 students. Wrote exam and homework questions. Graded exams and assignments. Held office hours. Undergraduate Teaching Assistant Tufts COMP105: Programming Languages ~100 students. Graded exams and assignments. Held office hours. Tufts COMP40: Machine Structure and Assembly Language Programming ~120 students. Graded exams and assignments. Held office hours.</p>	<p>Sep 2022 – Dec 2022</p> <p>Jan 2020 – May 2020</p> <p>Sep 2018 – Jan 2020</p>
Other Projects	<p>Simulation Inference on Urban Traffic Data University of Southern California, Los Angeles, CA Applied Bayesian conditional density estimation simulation inference to traffic simulations of the Seattle area. [Web]</p>	Nov 2021 – Dec 2021
Technical Skills	<p>Programming Python, C++, C, Java, JavaScript, SQL</p> <p>Machine Learning & Development PyTorch, Tensorflow, PyTorch Lightning, Apache Airflow, Docker</p> <p>Language Conversational Mandarin, Conversational Japanese</p>	