

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