

Jeffrey Tsaw

Contact

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Coursework

10-703 – Deep Reinforcement Learning*
18-898 – Graph Signal Processing*
18-743 – Neuromorphic Computer Architecture
10-707 – Adv Deep Learning
15-750 – Graduate Algorithms
18-447 – Computer Architecture
33-234 – Quantum Physics
10-701 – Intro to ML (PhD)
ELEC0024 – Digital Signal Processing and Design (UCL)
18-349 – Introduction to Embedded Systems

Technical Skills

Languages

Python ■ C ■ SystemVerilog
■ ARM ■ x86-64 ■ MATLAB

Tools

PyTorch ■ TensorFlow ■
GDB ■ Linux ■ FPGA

Activities

CMU Club Tennis Team

Aug 2019 – Present

- Quarterfinalist at 2019 USTA Regionals

London Dragons Varsity Hockey Team

Jan 2020 – Jul 2020

- BUIHA Division 1 South Champions

CMU Club Hockey Team

Aug 2017 – Present

Asian Student Association

Aug 2017 - Present

Interests

Sport/Outdoor Climbing
Hockey
Tennis
College Basketball
Football
Math
Jazz Music

Education

Carnegie Mellon University

Pittsburgh P.A

M.S, B.S (with Honors) Electrical & Computer Engineering

- GPA - M.S: 3.95/4.00 | B.S: 3.82/4.00
- HKN and TBP Honour Societies

Experience

Apple Inc.

Hardware Engineering Intern | Cupertino, CA (virtual) | Sep'21 – Dec '21

- Worked on GPU Memory Verification team
- Integrated idle checks and developed coverage for 5 modules within GPU routing block
- Developed novel strategy to hit previously un-hit coverage points using Xceligen ML tool to **improve coverage of a coverpoint by over 10%**

Credit Suisse Securities

Technology Analyst Intern | New York, NY (virtual) | Jul '20 – Aug '20

- Designed and developed a 2-stage pipelined model to extract bond tickers, ISINs, and CUSIPs from Bloomberg chat data in an Agile environment
- Trained and tuned an NER model in spaCy to recognise bond information and non-bond entities with over **98% precision and recall**
- Successfully extracted over **90,000 bond tickers**

Carnegie Mellon University

- 10-701: Intro to ML (PhD) TA | Pittsburgh, PA | Jan '21 – May '21
- 18-349: Intro to Embedded Systems TA | Pittsburgh, PA | Aug '20 – Jan '21

Projects

HighMMT: High Modality Multi-Task Learning

MultiComp Lab CMU

- Developed modality heterogeneity metric to facilitate parameter of sharing during training of multitask Transformer model
- Developed a modality heterogeneity aware parameter sharing framework to achieve **SOTA across 4 tasks with a 10% reduction in parameters**
- **Submitted to TMLR 2022**

AutoVöt: An Autonomous RC Vehicle Convoy

Partner Capstone Project for 18-500 | Jan '21 – May '21

- Developed a convoy of RC vehicles capable of autonomously navigating an obstacle course through V2V communication, where only the lead vehicle has perception capabilities
- **1st Runner Up** out of 30+ 18-500 Capstone projects in Spring 2021

Hybrid Model for Solving Math Word Problems

Project for 10-707 | Mar '22 – May '22

- Combined a bottom-up DAG extraction model with top-down tree decoder model into a novel hybrid neural model for solving math word problems
- Achieved 75% theoretical answer accuracy, **beating baseline SOTA by 1%**

RISC-V Processor

Project for 18-447 | Jan '21 – May '21

- Designed and implemented a synthesizable pipelined superscalar out of order processor on RV32I ISA in SystemVerilog, averaging 280 MIPS on prescribed benchmarks.
- Achieved **1st quartile performance** in Spring 2021 on prescribed benchmarks