SAILUN XU

(607)379-8886 sx38@cornell.edu website

EDUCATION

Carnegie Mellon University *Aug 2018 - Dec 2019*
Pittsburgh, PA
Master in Machine Learning GPA 3.77/4.0 (Core GPA 3.89/4.0)

Cornell University *Aug 2014 - May 2018*
Ithaca, NY
Bachelor of Arts in Mathematics(Cum Laude), Computer Science GPA 4.13/4.3

PUBLICATIONS

ChemBO: Bayesian Optimization of Small Organic Molecules with Synthesizable Recommendations

- Ksenia Korovina, **Sailun Xu**, Kirthevasan Kandasamy, Willie Neiswanger, Barnabas Poczos, Jeff Schneider, Eric Xing (2020).
- International Conference on Artificial Intelligence and Statistics (AISTATS) 2020
- PMLR Link

Video Content Swapping Using GAN

- Tingfung Lau, **Sailun Xu**, Xinze Wang (2020).
- Arxiv Link

Image Style Transfer and Content-Style Disentanglement

- **Sailun Xu**, Jiazhi Zhang, Jiamei Liu (2020).
- Arxiv Link

RESEARCH EXPERIENCE

Graduate Researcher Pittsburgh, PA
Carnegie Mellon University *Jan 2019 - Dec 2019*

- Advisor: Jeff Schneider
- We implemented a Bayesian Optimization framework using a Gaussian Process that allows efficient sampling and exploration of synthesizable molecules that maximizes any given score
- We proposed a new kernel for molecules based on the Optimal Transport(OT) that has shown better overall performance than the baseline: finger print kernels, which only serializes a molecule and ignores the structure

Undergraduate Researcher Ithaca, NY
Cornell University *Jan 2017 - May 2017*

- Advisor: Kilian Q. Weinberger
- Netflix challenge using the factorization machine model
- Profiled the training time bottleneck function and fully vectorized the part using einsum, reducing the run time per call from 700ms to 150ms
- Reached a RMSE at 0.92, beating the 0.98 baseline using support vector machine

INDUSTRY EXPERIENCE

Quantitative Researcher Chicago, IL
Citadel Securities *2020 Feb - Now*

- FICC(Fixed Income, Currencies and Commodities) Strategy & Monetization Research
- PTA(post-trading analysis) of our live trade
- Analyzed and fine-tuned our delay model for historical sim using the live trigger-to-trade latency and impact time at the exchange
- Quant Dev: Implemented our trading strategy; designed and implemented multiple tools to easily manipulate and visualize the data

Quantitative Research Intern Chicago, IL
Citadel Securities *May 2019 - Aug 2019*

- Alpha Research & Feature construction
- Fit a forward return prediction model per asset class by exploring different forms of penalized regressions
- Using xarray, qgrid, ipywidgets and IPython display to create a dynamic PNL visualization tool in Jupyter Notebook in which one can choose to see the pnl of a selection of symbols, date range, etc.

Quantitative Research Intern Chicago, IL
Citadel Securities *June 2018 - Aug 2018*

- Load-balancer based on graph segmentation using Graph Laplacian
- Genetic Programming
- Shunting-Yard algorithm for evaluating long expressions that would otherwise cause stack overflow using built-in parser
- Custom Directed Acyclic Graph visualization based on dagre-d3
- LZ4 file indexing for faster seeking and LRU cache
- Redis based inter-host lock

AWARD

Phi Beta Kapp Society (top 3%), Cornell University

Dean's List of the College of Arts and Sciences for Excellence in Scholarship, Cornell University

CPhO Third Prize, Shanghai

TEACHING ASSISTANT

Teaching Assistant for CS3110 (Functional Programming and Data Structure) Cornell University

Teaching Assistant for PHYS1112 (Physics I: Mechanics & Heat) Cornell University

RELEVANT COURSES

Machine Learning (CMU 10701)
Deep Learning (CMU 10707)
Probablistic Graphical Models (CMU 10708)
Advanced Machine Learning Thoery & Methods (CMU 10716)
Convex Optimization (CMU 10725)
Machine Translation (CMU 11731)
Operating Systems (Cornell CS 4410)

Machine Learning for Intelligent Systems (Cornell CS 4780)
Distributed Computing Principles(Cornell CS 5414)

Convex Analysis (Cornell ORIE 6328)
Introduction to Computer Vision (Cornell CS 5670)
Bayesian Machine Learning (Cornell ORIE 6741)

SKILLS

Programming skills (Familiarity in that Order):
Python, C/C++, LaTex

Extracurriculars:
Game, Workout, Photography, Badminton, Piano

Languages (Familiarity in that Order):
Chinese, English, Japanese