Yuchen Wang

Passionate software engineer and researcher, striving to solve challenging real-world problems.

LINKS

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EDUCATION

Stanford University
Sep 2021 - Mar 2023
Master of Science in Computer Science

University of Toronto
Sep 2017 - Jun 2021
Honours Bachelor of Science Computer Science & Statistics, minor in Mathematics
cGPA: 3.98/4, Course Avg.: A+

AWARDS

(Jan 21) *Konrad Group Women in Technology Scholarship* $2000
(Jan 21) *The Dorothy Walters Scholarship* $2000
(May 20) *UofToronto Excellence Award* $6,000
(Dec 19) *The Dorothy Walters Scholarship* $600
(All years) *Dean's List Scholar*

SKILLS

Specialized
Python • C • Unix/Linux • LaTeX • Git • JavaScript • ReactJS • HTML & CSS

Familiar
R • C++ • MatLab • SQL • Java (Android)

Machine Learning Libraries
NumPy • PyTorch • Pandas • Matplotlib • ggplot2 • SciPy • Scikit-learn • OpenCV2

WORK EXPERIENCE

Microsoft | Applied and Data Scientist Intern - Bing
June 2022 - September 2022 | Mountain View, CA
- Generated different levels of negative data for language retrieval models using Approximate Nearest Neighbor on Euclidean distance of encoded query vectors.
- Designed new evaluation metrics that are universal for all natural languages (including URL overlap rate and modified BLEU/Rouge scores) to calculate relevance scores among search queries and docs.
- Developed a pipeline that effectively evaluates query-doc relevance scores using Transformer-based models.
- Technologies: Python, PyTorch, Pandas, SQL

Ernst & Young | Technical Consultant Intern (Software)
June 2021 - August 2021 | Shanghai, China
- Developed a software pipeline to help an aviation authority automate extracting parameter values from graphic interfaces, which takes real-time video stream as inputs, and outputs formatted data.
- Applied optical character recognition machine learning models (CNN-RNN and open-sourced software) and ran experiments on a dataset from the client.
- Communicated closely with clients, wrote detailed documentations and proposal for the project workflow.
- Technologies: Python, OpenCV2, Pandas, Docker

Vector Institute | Machine Learning Intern - Prof. Roger Grosse
April 2020 - January 2021 | Toronto, Ontario, Canada
- Designed and implemented hypernetwork algorithms (Self-Tuning Networks) to auto-tune hyperparameters of neural networks during a single run.
- Applied the algorithm on training Bayesian Neural Networks. The experimental results showed that the new architecture helps solving the difficult posterior collapse problem.
- Proven the related mathematical theories.
- Technologies: Python, NumPy, PyTorch, Autograd, Slurm

University Health Network | Machine Learning Intern - Prof. Bo Wang
May 2019 - December 2019 | Toronto, Ontario, Canada
- Worked with clinicians of Toronto General Hospital to design a data processing pipeline for electronic health records time-series.
- Engineered modular code for RNNs, Transformers and tree-based models.
- The final models accurately predict one-year and two-year outlook cause of death for post-organ-transplant patients with 0.7-0.8 auc-roc.
- Technologies: R, Pandas, Python, NumPy, PyTorch, Scikit-learn

PROJECTS

Smart and Secure Exchange | May 2022 - Present
Developed a web app that allows users to post needs for currency exchange, chat with others, and review transactions. Contributed to front and backend development using JavaScript MERN stack. Stored and accessed data in Firebase Realtime Database using Rest API calls.

Project X Research Competition | September 2020 - November 2020
- Led the UofT team to develop a new neural ordinary differential equation architecture, which learns the dynamics of time series with multiple predictors and beats the baseline models in performance.
- Applied the model on semi-synthetic plant disease datasets and achieved remarkable results in both extrapolation and interpolation.
- Awarded a $20,000 prize as a winner. [ICML 2021 workshop]

ASA Datafest | June 2020
Led a student group to develop BERT models that classifies sentiment for COVID-19 related tweets, then performed data analysis and visualization.