DAVID YUE
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EDUCATION

University of Toronto — 2022
- Honours Bachelor of Science (HB.Sc) – *with Distinction*, Computer Science and Mathematics (GPA: 3.25/4)
- Computer and Mathematical Sciences Teaching Assistant Award Nominee (2022)
- Independent Study (Grade: 98%): Modern programming language with built-in asynchronous primitives (2021)
- TA: Operating Systems (×2), Computer and Network Security, Programming on the Web, Numerical Algorithms for Computational Mathematics (×2), Software Tools and Systems Programming

SKILLS

Languages: C, Rust, C++, Python, HTML, CSS, JavaScript, Typescript, MySQL, Go, Java, PHP, Ruby, Solidity, R, LaTeX

Tools & Frameworks: Gin-Gonic, React, Prisma, ethers, Elastic Search, Ruby on Rails, web3.py, Bash, Docker, make, CMake, Git, JIRA, NumPy, PyTorch, Matplotlib

Courses: Algorithm Design and Analysis, Computability and Computational Complexity, Operating Systems, Design and Analysis of Data Structures, Computer and Network Security, Artificial Intelligence, Databases

EXPERIENCE

Software Research Engineer (Full Time) — November 2022 – June 2024
Huawei Technologies Inc. - Vancouver, BC

- Designed and developed a cutting-edge data marketplace, integrating Blockchain and Self-Supervised Machine Learning Watermarking techniques. Utilized Solidity, Python, and the web3.py framework to create a fully verifiable, traceable, and detectable marketplace.
- Co-authored and published a significant research paper outlining the design of the data marketplace and evaluating the performance of various components.
- Led the authorship of a patent focusing on watermarking tabular data using frequency domain methods.

Full Stack Software Engineer (Full Time) — March 2022 – August 2022
dApp Technology Inc. - Toronto, ON

- Built large decentralized applications utilizing NodeJS, React, Solidity, and the ethers API for seamless interaction with the Ethereum Blockchain.
- Developed and integrated smart contracts to enable transparent and decentralized transactions.

Software Engineer (Intern) — May 2021 – August 2021
Shopify Inc. - Vancouver, BC

- Implemented and maintained Shopify CMS features using Ruby on Rails framework, collaborating with cross-functional teams to optimize performance and enhance code quality.

Software Development Student (Co-op) — May 2019 - December 2019
Blackberry - Waterloo, ON

- Maintained and implemented features for the current cloud monitoring software, utilizing the Ruby on Rails framework.
- Developed a new internal cloud monitoring web application using the Go Gin-Gonic and JS React frameworks.
- Proactively recommended the adoption of modern technologies like Typescript for inclusion in the next generation of the application.

Scientific Programmer (Co-op) — September 2018 - December 2018
Environment Canada and Climate Change - Toronto, ON

- Created user-friendly plotting software with Python's matplotlib library, reducing scientific data plotting time by over 50%, and designed a relational database to enhance remote environment sensor data retrieval efficiency by 40%.

Junior Website Support (Co-op) — January 2018 - April 2018
Ontario Treasury Board Secretariat - Toronto, ON

- Developed a Workflow Management tool for the OTB Financial Community, leveraging the Microsoft SharePoint API to create database-driven services for the community's Intranet Gateway.

PUBLICATIONS

- Masrani, V., **Yue, D.**, Rezaei, A. Akbari, M., & Zhang, Y. (n.d.). Sequence-to-Sequence Langue Model Watermarking via High Entropy Passthrough Layers. *Submitted to AAAI'25: Association for the Advancement of Artificial Intelligence (under review)*
- Che, X., Akbari, M., Li, S., **Yue, D.**, Zhang, Y., & Chu, L., (2024). Primary Key Free Watermarking for Numerical Dataset. *ICPR '24: International Conference on Pattern Recognition*
- Ranjbar Alvar, S., Akbari, M., **Yue, D.**, Chu, L., & Zhang, Y., (n.d.). AMUSE: Adaptive Multi-Segment Encoding for Dataset Watermarking. *Submitted to AAAI'25: Association for the Advancement of Artificial Intelligence (under review)*
- Ranjbar Alvar, S., Akbari, M., **Yue, D.**, & Zhang, Y. (2023). NFT-Based Data Marketplace with Digital Watermarking. *KDD '23: Proceedings of the 29th ACM SIGKDD Conference on Knowledge Discovery and Data Mining.* *https://doi.org/10.1145/3580305.3599876*
- Harrington, B., Kulkarni, A., Ren, Z., Trinh, C., Gharadaghi, R., Amarouche, T., Aneel, A., Karki, A., Syed, S., & **Yue, D.** (2023). Finding and Categorizing COVID-19 Papers in CS Education. *In Proceedings of the 54th ACM Technical Symposium on Computer Science Education V. 2 (SIGCSE 2023). Association for Computing Machinery, New York, NY, USA, 1342.* *https://doi.org/10.1145/3545947.3576288*