Jonathan Hu

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Education

- **Cornell University**
  Master of Computer Science; Specialization in Machine Learning — *Aug 2023 - Jan 2025*
- **University of British Columbia** — **GPA: 4.0**
  Bachelor of Commerce, Combined Major in Computer Science and Business — *Sep 2020 - May 2023*
  - **Academic Standing**: Ranked 1st among program peers, 5th in faculty (**Top 0.5%** of 908 students); expedited graduation in 3 years—a program first.
  - **Relevant Coursework**: Financial Engineering with Stochastic Calculus, Large-Scale Machine Learning Systems, Optimization, NLP, Computer Vision, Reinforcement Learning, Distributed Computing, Networking.

Work Experience

- **Cornell University** — Ithaca, New York
  Graduate Student Researcher — *Sep 2023 - Present*
  - Developing a restaurant recommendation app by researching and utilizing cutting-edge LLMs trained on proprietary Yelp and Google customer data. Leveraging Flask for the backend, MongoDB for the database, and hosting the app on Expo.
  - Conducting extensive data manipulation and transformation, ensuring optimized data quality for model predictions.
- **Amazon Web Services** — Vancouver, Canada
  Software Development Engineer Intern — *Apr 2023 - Aug 2023*
  - Revitalized business process workflow dashboards, empowering dynamic, real-time monitoring and facilitating immediate, data-driven decision-making for AWS Commerce Platform.
  - Engineered and deployed a TypeScript package to automate wiki creation through CDK, drastically reducing ticket volume by 40% through the strategic enrichment and restructuring of user-friendly service dashboards.
  - Architected and seamlessly integrated a scalable Java software component to produce and inject customized workflow metrics into AWS CloudWatch, resulting in a 2x surge in metric availability and cutting ticket resolution time in half.
- **University of British Columbia** — Vancouver, Canada
  Lead Teaching Assistant — *Dec 2020 - May 2023*
  - Collaborated with faculty to deliver courses in Software Engineering, Computer Systems, and Algorithm Design.
  - Spearheaded training initiatives for 80 teaching assistants, substantially elevating the department's instructional quality.
- **Shenzhen Youpin Cosmetics Tools Co., Ltd.** — Shenzhen, China
  Software Engineer (Contract Part-Time) — *Jan 2022 - Jul 2022*
  - Secured and executed a **$12,000** contract to develop and deploy an inventory management app using Java and MySQL.
  - Centralized inventory management across 4 departments, enhancing accuracy by 10% and cutting labor hours by 50%.

Research Experience & Projects

- **York University CVR-VISTA Vision Science Summer Research** : Directed an electroencephalogram (EEG) research project in July 2023 to analyze neural responses to various driving conditions. Leveraged scikit-learn and PCA for feature extraction and dimensionality reduction, while normalizing data via Min-Max scaling. Built predictive models using TensorFlow, employing various deep learning architectures such as Convolutional Neural Networks (CNNs) with ReLU activation, and SGD optimization. Utilized back-propagation for training and applied L1/L2 regularization.
- **Job Central** : Engineered a full-stack job query app using Spark, PostgreSQL, and React. Built RESTful APIs to execute CRUD operations via Oracle JDB. Implemented advanced search filters to improve the job-matching process for users.
- **University Blueprint** : Collaborated with an agile development team to create a comprehensive full-stack web application focused on course planning and analytics within an 8-week sprint cycle. Enhanced the application's capability by incorporating EBNF syntax for sophisticated trend analysis and utilized Yarn for streamlined package management
- **Pomodoro Study** : Created a Java desktop app to boost productivity, featuring an intuitive GUI using Swing. Integrated an AudioInputStream for customizable music and implemented data persistency to maintain checklist items across sessions.

Leadership Experience

- **Cars and Hoops Foundation** — Vancouver, Canada
  Vice President of Operations — *Nov 2021 - Present*
  - Amplified fundraising campaigns that raised over **$200,000** for Canuck Place Children's Hospice.
  - Orchestrated strategic partnerships with Lucid, Ledcor, ASPAC Developments, and National Bank of Canada.
- **Varsity Basketball** — Richmond, Canada
  BC Regional MVP 2020, Richmond City League All-Star 2020 — *Sep 2015 - May 2021*
  - Excelled as team captain and led the team to its inaugural provincial championship in 18 years.

Skills Summary

- **Languages**: Python, C, Golang, C++, Java, R, SQL, Typescript, Matlab, Scala
- **Technologies**: TensorFlow, PyTorch, OpenCV, Pandas, spaCy, Spark, Kubernetes, Docker, AWS, Azure, Git, Kafka
- **Quantitative**: Statistical Modeling, Time-Series Analysis, Algorithmic Trading, Risk Management, Optimization