Nicholas Fung

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Experience

Riskfuel Analytics ⧉   Sep 2021 – Dec 2023 | Toronto, Canada
ML Engineer
- Delivered deep learning models for various structured products for several major investment banks. Responsible for defining the scope of work with the client, designing, training and validating the delivered model, and tailoring performance trade-offs to suit client requirements.
- Developed a specialized deep learning model to fit equity option prices (implied volatility) and generate synthetic data for BMO Capital Markets.

Riskfuel Analytics ⧉   Apr 2020 – Aug 2020 | Toronto, Canada
Research Associate
- Accelerated exotic option pricing models for Scotiabank's XVA desk by implementing state-of-the-art synthetic data generation strategies for high dimensional data, and training deep learning models to reach speedups of over 800,000x in pricing throughput compared to conventional numerical methods.
- Created highly reliable and scalable workflows by containerizing runtime environments using Docker, and orchestrating workloads using Kubernetes on an on-prem cluster with 50+ nodes.
- Implemented a CI/CD pipeline that automated unit testing and image building using GitHub Actions, improving developer workflows by reducing build times by 40%.

Non-Invasive Surgical Innovations   Apr 2018 – Aug 2018 | Hong Kong
Software Engineer
- Deployed a real-time colorectal tumor detection prototype, achieving sub-50 ms latency by creating a dataset of over 3,000 scraped and annotated images, and training a Convolutional Neural Network using the YOLOv3 architecture.
- Implemented noise reduction and edge enhancement techniques using Nvidia's CUDA API in C++ for the Jetson TX2 embedded computing module.

University of British Columbia; University of Toronto   Canada
Teaching Assistant
- Conducted tutorials and labs with more than 40 students
- Organized, designed, and marked assignments, exams for over 200 students
- Courses: Operating Systems, Algorithms and Data Structures, Python for Business

Education

MASc, Computer Engineering   Toronto, Canada
University of Toronto
Thesis: Machine Learning with Financial Applications
Awards: NSERC CGS-M, Mitacs Accelerate, Bell Scholarship

BASc, Computer Engineering   Vancouver, Canada
University of British Columbia
Graduated with Distinction, Dean's Honour List
Awards: Martin Sikes Award, MacKenzie Swan Scholarship, Trek Scholarship

Skills

Data Tools/Languages
PyTorch, Tensorflow, NumPy, Pandas, numba, matplotlib, plotly, scikit-learn, Docker, Kubernetes, AKS, Git, GitHub Actions

Technical Skills
Data analysis, data visualization, scientific computing, quantitative modelling, deep learning, NLP, computer vision, MLOps, CI/CD

Certificates

Certified Kubernetes Administator (CKA) ⧉
Certification ID: LF-hkyfxltp2j