Adrian Lam

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Experience

Full-Stack Developer Intern May. 2024 – Aug. 2024
Radiair *Vancouver, BC*

- Reduced flight search response times by around 40% by developing dynamic search functionality and optimizing server-side rendering with Next.js API routes.
- Reduced server resource usage by around 30% through migration to Vercel edge runtime and implementation of serverless functions and edge caching strategies.

Full-Stack Developer Oct. 2023 – Aug. 2024
UBC CSSS Tech Consulting *Vancouver, BC*

- Streamlined data retrieval process by integrating Instagram API and implementing result caching, reducing retrieval times by 20% and enhancing real-time user engagement.

Co-President Dec. 2021 – Jun. 2022
Cawthra Programming Club *Mississauga, ON*

- Led marketing initiatives using Photoshop, resulting in a 30% increase in club attendance.
- Orchestrated strategic collaborations with executive teams, boosting event attendance by 80%.

Projects

Heida AI | *TypeScript, Next.js, Python, FastAPI, Supabase, Docker, Redis*

- Built a full-stack AI interaction platform with real-time file collaboration, RAG capabilities, and 99.91% uptime.
- Reduced API hosting costs from $24.57 to $1.67 monthly by implementing embedding and BM25 model caching and efficient memory management.
- Optimized streaming response handling achieving 35% performance improvement through efficient buffer management and TextEncoder reuse.
- Achieved 82.6% data compression ratio using pako (zlib) for Redis cache, which reduced initial page load time by 44.7% through dynamic fetching implementation.

MNIST Digit Classifier | *Python, NumPy, PyTorch*

- Achieved 98.32% accuracy on MNIST handwritten digit classification by implementing a 4-layer neural network (784→256→256→256→10) from scratch, surpassing baseline models by 3.28%.
- Engineered deep learning pipeline from scratch, implementing forward propagation, backpropagation, and gradient descent without using high-level PyTorch modules.

UBC Grade Analyzer | *Python, pandas, Scikit-learn, Seaborn, NumPy*

- Reduced grade prediction error to 4.84% by engineering 20+ features including historical averages and professor metrics, enabling accurate course difficulty predictions.
- Achieved R^2 score of 0.52 in grade predictions by implementing time-series cross-validation and Ridge regression on 10+ years of course data.
- Automated data preprocessing for 15+ columns by building a comprehensive Scikit-learn pipeline for feature standardization and missing value handling.

Education

University of British Columbia Sep. 2022 – Apr. 2026
Bachelor of Science in Mathematics *Vancouver, BC*

- **Relevant Coursework:** Data Structures, Algorithms, AI/Machine Learning, Database Design, Networks, Software Architecture

Technical Skills

Languages: JavaScript/TypeScript, Python, Java, C, C++, SQL, HTML/CSS, Golang
Web & Frameworks: Express.js, React, Next.js, Node.js, RESTful APIs, FastAPI, Flask, Tailwind CSS, pandas, NumPy, Matplotlib, JUnit, Pytorch, Seaborn
Databases: PostgreSQL, MongoDB, Supabase
Developer Tools: Git, GitHub, Docker, VS Code, PyCharm, IntelliJ, Postman, NeoVim
Cloud & Deployment: Vercel, CI/CD pipelines