Dev Dalsania

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EDUCATION

Concordia University | Montreal, QC Sep. 2023 - Sep. 2027 (Expected)
Bachelor of Science in Computer Science

- Courses: Artificial Intelligence, Machine Learning, Web Programming, Operating Systems, Data Structures, Algorithms & Analysis, Theory of Computer Science

TECHNICAL SKILLS

Languages: Java, Python, JavaScript, SQL, TypeScript, HTML/CSS.
AI / ML: PyTorch, PyTorch Geometric, scikit-learn, NumPy, pandas, Grad-CAM, GATv2, CNNs, NLP, Reinforcement Learning.
Frameworks: React, Next.js, React Native (Expo), FastAPI, Node.js, Tailwind CSS.
Infrastructure: AWS, Docker, Kubernetes, Git, Vercel, Render, PostgreSQL.
Tools: Claude Code, Cursor, Linux, Figma, Procreate.

PROJECTS

Spatial GATv2 — Airbnb Demand Prediction | PyTorch Geometric, scikit-learn, NetworkX, pandas, folium

- Built a three-layer Spatial GATv2 graph neural network to classify high-demand Airbnb listings in Montreal, representing each listing as a node with spatial edges weighted by geographic proximity.
- Benchmarked GATv2 against Logistic Regression and Gradient Boosting across accuracy, F1, and ROC-AUC; Gradient Boosting outperformed the GNN on tabular features, framed as a publishable finding on the limits of GNNs in feature-dominant regimes.
- Implemented dynamic attention (GATv2Conv, Brody et al. 2022) with multi-head attention, Adam optimizer with StepLR scheduling, and a full ablation study isolating spatial graph edges from node features.
- Produced interactive Folium map visualizations of the Montreal listing graph, alongside confusion matrices, ROC curves, and precision-recall breakdowns across all models.

Deep Learning for Dermatological Diagnosis | PyTorch, ResNet-50, VGG-16, MobileNet-V2, Grad-CAM, CUDA
Group Project, 5 members

- Owned the HAM10000 data pipeline: cleaning, 4-class selection, and stratified 70/15/15 train/val/test splitting across ~7,500 images.
- Built evaluate.py, the team's shared evaluation script computing accuracy, precision, recall, F1-score, and ROC-AUC with CSV/JSON output and confusion matrix generation across all 9 baseline and 2 TL model runs.
- Implemented gradcam.py and plots.py: Grad-CAM figure generation for model interpretability and training/validation curve visualization across all datasets and architectures.
- Authored tune_hyperparams.py: grid-search runner over learning rate and batch size configurations with per-trial result logging and visualization helpers.

FLÂNEUR | React, FastAPI, Python, AWS, Tailwind CSS

- Built a minimalist travel discovery platform that helps users find hidden gem activities globally using interactive maps and advanced filtering.
- Engineered a scalable backend with FastAPI deployed on AWS, handling complex geospatial queries to deliver location-based data in real-time.
- Designed a responsive, distraction-free UI using React and Tailwind CSS, prioritizing user experience and mobile compatibility.
- Implemented secure API endpoints with proper validation logic, ensuring protection against SQL injection and safe data transactions.

ADDITIONAL EXPERIENCE

Team Member | Spirulina | Montreal, QC Nov. 2025 - Present

- Rapidly adapted to new operational workflows and POS systems, integrating into the service team to ensure seamless customer experiences during high-traffic shifts.