

Bhuvana Chandar (Bhuvan) Veeravalli

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Objective

Analytical innovator passionate about designing intelligent systems that merge data-driven modeling, predictive analytics, and statistical learning. Experienced in optimizing temporal architectures and deep neural pipelines for real-world forecasting, anomaly detection, and automation challenges. Excels at transforming raw information into high-impact, scalable insights that advance decision-making in complex systems.

Education

- **University of Alberta**

Bachelor of Science in Computer Science (GPA: 3.8/4.0)

Expected 2027

Edmonton, AB

Experience

- **Undergraduate Research Assistant — Renewable Thermal Energy Lab**

University of Alberta

Jan 2025 – Present

Edmonton, AB

- Achieved $R^2 = 0.98$ and MAE $< 0.5^\circ\text{C}$ by engineering a multi-head attention LSTM predicting 10-point thermal storage temperature profiles from dynamic sensor data.
- Increased model validation speed by 40% by automating data ingestion, residual analysis, and visualization across 150+ experimental runs.
- Improved diagnostic precision through adaptive error-tracking pipelines that identified optimal test configurations and performance thresholds.

- **Undergraduate Teaching Assistant — STAT 252: Applied Statistics II**

University of Alberta

Sep 2025 – Present

Edmonton, AB

- Corrected and assessed over 250+ student submissions, applying consistent evaluation metrics across statistical modeling and data analytics coursework.
- Enhanced student understanding of regression, hypothesis testing, and data-driven decision-making through one-on-one academic support.
- Managed grading and tutorial coordination efficiently, demonstrating exceptional time management and organizational skills under tight academic timelines.

Projects

- **FlightPredict — Flight Delay Prediction System**

2025 – Present

Python, PyTorch (MLP), FastAPI, Java Spring Boot, Docker, AWS

- Delivered >85% accurate flight delay and cancellation predictions using a multi-target PyTorch neural network (MLP) trained on integrated BTS and weather datasets.
- Deployed a dual-service architecture (FastAPI + Spring Boot) for real-time inference, enabling sub-500ms latency and scalable API integration for airlines and traveler systems.

- **Android Mood Tracking App**

Jan – Apr 2025

Android SDK, Firebase, Java

- Built an offline-first Android app for mood tracking with geolocation and media integration to improve emotional awareness and reflection.
- Implemented Firebase authentication and real-time synchronization, enabling secure multi-device access and data persistence.

- **Credit Card Fraud Detection**

Nov 2024 – Jan 2025

Python, scikit-learn, NumPy

- Improved fraud detection precision by 15% through feature selection and hyperparameter tuning across multiple ML algorithms.
- Designed and evaluated binary classifiers optimizing both recall and runtime for high-volume financial datasets.

- **Real-Time Lane Line Detection**

Sep – Dec 2024

Python, OpenCV

- Designed a video-based lane detection system using edge detection and contour mapping to visualize driving lanes with frame-synchronized overlays.
- Enhanced image processing efficiency by 30% through optimized filtering and contour extraction pipelines.

Skills

- **Core Areas:** Predictive Modeling, Deep Learning, Time-Series Forecasting, Data Analytics, Computer Vision, Optimization
- **Frameworks/Tools:** PyTorch, scikit-learn, OpenCV, FastAPI, Spring Boot, Firebase, Docker, Git
- **Concepts:** Model Evaluation, Residual Analysis, Multi-Target Learning, Statistical Inference, Feature Engineering
- **Soft Skills:** Analytical Thinking, Collaboration, Technical Communication, Agile (Scrum)

Certifications

- | | |
|---|-----------------|
| • Generative AI for Software Development — DeepLearning.AI | <i>Oct 2025</i> |
| • Google Cloud Data Analytics Certificate — Google (Expires Sep 2028) | <i>Sep 2025</i> |
| • Introduction to Data Analytics — IBM | <i>Jul 2025</i> |

Awards & Scholarships

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|---|---------------------------|
| • NSERC Undergraduate Student Research Award | <i>Apr 2025</i> |
| • University of Alberta Undergraduate Scholarship (International) | <i>Sep 2024</i> |
| • Dean's Honor Roll | <i>Jun 2024, Jun 2025</i> |
| • University of Alberta Gold Standard Scholarship | <i>Aug 2023</i> |
| • University of Alberta International Admission Scholarship | <i>Aug 2023</i> |
| • University of Alberta Regional Excellence Scholarship | <i>Aug 2023</i> |

Volunteer Experience

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| • Edmonton's Food Bank | <i>Sep 2024 - Nov 2024</i> |
| <i>Volunteer</i> | |
| – Assisted in sorting and organizing food donations, assembling hampers, and supporting distribution efforts. | |
| • The Mustard Seed | <i>Sep 2024 - Nov 2024</i> |
| <i>Volunteer</i> | |
| – Helped organize donations and engaged with community members experiencing poverty and homelessness. | |
| • Hope Mission | <i>Sep 2024 - Nov 2024</i> |
| <i>Volunteer</i> | |
| – Assisted with meal preparation and service, creating a welcoming environment for individuals facing poverty and addiction. | |