REETI PRADHANANGA

Master's in Computer Science | Software Engineer

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SUMMARY

Software Engineer with a Master's in Computer Science, having a strong foundation in backend development, computer vision, and machine learning. Experienced in building scalable APIs and predictive systems using Go, Python, and modern frameworks. Skilled in developing microservice applications and applying advanced ML techniques for real-world problems. Proven ability to deliver robust, maintainable solutions in both research and industry settings.

EDUCATION

M.S., Computer Science, University of Louisiana at Lafayette, 4.0 GPA — January 2024 – May 2025
B.E., Computer Engineering, Tribhuvan University *(Batch Topper)* — November 2017 – April 2022

SKILLS & TOOLS

Languages/Database: Python, Go, PowerShell, JavaScript, C/C++, HTML, CSS**,** MySQL, PostgreSQL, MongoDB
Tools: Visual Studio Code, Google Colab, Jupyter, PyCharm, GitHub, GoLand, git, Postman
Libraries/Frameworks: Django, Express, Node.js, Gin, Echo, Pandas, NumPy, PyTorch, Scikit-Learn, TensorFlow, OpenCV
AI/GenAI Tools & Frameworks: OpenAI, Ollama, LangChain, FAISS, Chroma, HuggingFace
Core Technical Skills: Microservice Architecture, Asynchronous/Event-Driven Processing, API Development, Go Concurrency (goroutines, channels), Agile Methodologies, Machine Learning

WORK EXPERIENCE

Graduate Research Assistant, *University of Louisiana at Lafayette* — January 2025 - May 2025

- Developed computer vision models using OpenCV for real-time traffic video analysis, object detection, and tracking.
- Built predictive models using Python to analyze traffic flow and congestion.
- Integrated traffic simulation software (SUMO) with Python for traffic flow analysis to provide data-driven insights.
- Engineered future frame predictions using CNN and ConvLSTM for traffic forecasting.
- Engineered machine learning solutions for autonomous traffic monitoring systems, enhancing real-time decision-making capabilities and data-driven insights.

Graduate Teaching and Research Assistant, *University of Louisiana at Lafayette* — August 2024 - December 2024

- Conducted data analysis & predictive modeling for biomedical datasets using Python.
- Conducted research on Acute Mountain Sickness (AMS) prediction using classical machine learning and Hyperdimensional Computing (HDC).
- Led hands-on Python programming labs, debugging code, and mentoring students.

Backend Developer, *RARA Labs* — April 2022 - December 2023

- Developed and optimized scalable backend services for fintech applications using Go.
- Streamlined API development workflow by implementing GraphQL endpoints alongside RESTful services, reducing integration complexity, and improving data access patterns.
- Engineered robust authentication systems with JWT integration, establishing comprehensive permission-based authorization frameworks for secure data access.
- Improved database query performance in PostgreSQL through indexing & query optimization.
- Leveraged Go's concurrency model with goroutines & channels to reduce response times.
- Developed custom middleware solutions for request management, implementing sophisticated throttling mechanisms and detailed system logging
- Led backend infrastructure modernization initiatives, focusing on scalability and maintainability while mentoring junior developers in Go best practices.

Software Engineering Intern, *Leapfrog Technology, Inc*. April 2021 – June 2021

- Developed interactive web applications using JavaScript, HTML, and CSS.
- Built and maintained RESTful APIs using Node.js & Express.
- Engineered responsive web applications and RESTful APIs using Node.js stack, implementing robust solutions for complex business requirements.
- Streamlined development workflows by integrating modern JavaScript frameworks and optimizing API performance for enhanced user experience.

PROJECTS

Insurance Agent *(Python, LangChain, OpenAI, FAISS, ChromaDB, Gradio)*

- Developed advanced QA pipelines combining LLMs (OpenAI, Ollama) with RAG (Retrieval-Augmented Generation) techniques.
- Built a virtual corporate assistant capable of accurately answering queries.

Sentiment Analysis with Bi-LSTM *(Python, TensorFlow, Keras, Pandas)*

- Implemented Bi-LSTM (Bidirectional Long Short-Term Memory) for sentiment analysis.
- Tested on Amazon review datasets, achieving improved sentiment classification accuracy.

Twitter Sentiment Analysis On Gadget Reviews *(Django, ReactJS, Pandas, PostgreSQL)*

- Built a real-time sentiment analysis tool using Naïve Bayes Classifier, analyzing tweets about gadgets.
- Integrated Twitter API for live data collection and preprocessing.

Hamro Krishi *(NodeJS, HTML, CSS, MongoDB)*

- Developed a full-stack marketplace for farmers to list and sell products.
- Implemented real-time chat functionality to enhance user engagement.

Job Recommendation System *(Django, Bootstrap, PostgreSQL)*

- Created a web application using a Content-Based Filtering Algorithm to recommend IT-related jobs based on user skills and preferences

Roll with It *(C++, Graphics.h)*

- Developed a single-player car game where the speed increases with each level, showcasing programming skills and game design

RESEARCH & PUBLICATIONS

- **AMS-HD: Acute Mountain Sickness Detection with Hyperdimensional Computing** *(ISCAS 2025 – Accepted)*
- **Digital Twin-Aided Municipal Traffic Control** *(SUMO Conference 2025 – Accepted)*

AWARDS

KulRatna Tuldahar Award (*B.E. University Topper, Undergraduate*)