Yeshwanth Balaji

704-388-4547 | balaji.y@northeastern.edu | linkedin.com/in/yeshwanthbalaji | github.com/YeshwanthBalaji0412

Boston, MA - 02135

EDUCATION

- **Northeastern University** *Expected December 2026 | GPA: 3.34*
Master of Science in Software Engineering Systems Boston, USA

- **Vellore Institute of Technology** *July 2020 - August 2024*
Bachelor of Technology in Computer Science and Engineering Chennai, India

TECHNICAL SKILLS

- **Programming & Databases:** Python, Java, SQL, JavaScript, Node.js, HTML/CSS, MySQL, MongoDB

- **AI/ML Frameworks:** TensorFlow, Keras, **Pytorch**, Scikit-learn, Pandas, NumPy, OpenCV, **(Familiarity with LLMs/VLMs)**

- **Cloud & DevOps:** AWS (S3, EC2, RDS, IAM, CloudWatch, **Bedrock**), Google Cloud Platform, Terraform, Docker, GitHub Actions, Packer

- **Tools & Technologies:** RESTful APIs, Git, VS Code, Postman, Jupyter Notebooks, Flask, React

PROJECTS

- **Cloud-Native Health Monitoring Web Application** *August 2025*

  - Developed scalable health check REST API using Node.js, Express.js, and MySQL with comprehensive monitoring capabilities for system uptime tracking
  - Architected AWS cloud infrastructure using Terraform IaC with EC2 Auto Scaling Groups, RDS MySQL, and S3 storage with KMS encryption
  - Implemented CI/CD pipelines with GitHub Actions for automated testing (**including unit and integration testing**) and zero-downtime deployments achieving 99.9% uptime SLA

- **MultiClass Ocular Disease Prediction using Transfer Learning Models** *April 2024*

  - Developed a **computer vision-based ML solution** using CNNs (VGG19, MobileNetV2) with Python, TensorFlow, and Keras to classify retinal images for glaucoma, cataracts, and diabetic retinopathy with 93% accuracy.
  - Implemented a custom attention mechanism on the VGG19 architecture, improving classification performance from 91.69% to 93.23% by enabling more precise feature extraction from medical images.
  - Optimized model performance through comprehensive hyperparameter tuning, **evaluated data quality**, and **prepared performance analysis reports** on over 4,200 images.
  - **Collaborated with research peers** to define project scope and validate model performance, demonstrating strong capabilities in applying machine learning models to real-world classification tasks.

- **Trip-Based Modeling of Fuel Consumption in Modern Fleet Vehicles** *July 2023*

  - Developed a trip-based fuel consumption prediction model for fleet vehicles using machine learning algorithms (Scikit-learn) and Python (Pandas, NumPy) to address operational cost challenges.
  - Designed and deployed a **Python-based ML solution** via a Flask web application with **REST API endpoints** for real-time fuel consumption predictions, creating a backend service to support intelligent agent functionality.
  - Achieved 86.5% model accuracy in predicting fuel consumption patterns by analyzing driving behaviors, road conditions, and vehicle characteristics from a dataset of 388 vehicle records.

CERTIFICATIONS & PUBLICATIONS

[1] **AWS Certified Cloud Practitioner**

[2] Sujith M, **Yeshwanth B**, Akash Raj ST, et al. (2023). **Optical Character Recognition and Analysis of Tamil Characters**. *International Journal of Microsystems and IoT*, Vol. 1, Issue 7, pp. 460-468.