

# Sathwik Veeraiah Udgimath

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Skilled Software Engineer proficient in Python and AWS/Azure, delivering innovative solutions. Experienced in Agile methodologies, system integration, and collaborative teamwork for efficient project execution. Successfully contributed to a \$10 million project with a team of 8 members.

## EDUCATION

University at Buffalo, The State University of New York

Buffalo, NY

Master of Science in Data Science

Aug 2023 – Dec 2024 (Expected)

Visvesvaraya Technological University

Bangalore, India

Bachelor of Engineering in Computer Science and Engineering

Aug 2017 – July 2021

## WORK EXPERIENCE

### Teaching Assistant

May 2024 – Aug 2024

University at Buffalo

Buffalo, New York

- Conduct 3-hour weekly office hours to assist 110 students with course material and assignments, providing constructive feedback on submissions, maintaining high academic standards, and analyzing performance data to implement targeted strategies that improved student success rates by 25%

### Software Engineer

Oct 2021 – July 2023

LTIMindtree, Backend developer, cloud engineer

Bangalore, India

- Collaborated with seniors to set up **Nginx** as a reverse proxy in the edge module on a **healthcare** project, utilizing TCP/IP networking principles to improve load balancing and reducing server response time by 40%.
- Researched **HAProxy** and **Squid Proxy** as alternative solutions for reverse proxy deployment within the edge module, providing detailed reports that optimized system efficiency by 25%.
- Dockerized** our Nginx proxy load balancer and put it in a **AWS ECR**, which streamlined deployment processes and ensured consistent environments across different stages of development and production.
- Implemented token-based authentication for HTTP-based **API Gateway in AWS** to ensure secure access to resources, enhancing overall system security by 60% and reducing unauthorized access attempts by 80%.
- Developed **Flask-based APIs using Boto3** to streamline data transfer between **Amazon S3 and Edge VM**, as well as between Edge VM and device VMs, decreasing data transfer time by 50% and facilitating seamless file operations.
- Leveraged **microservices architecture** to enhance scalability and maintainability of data transfer workflows, demonstrating proficiency in designing and deploying modular services.
- Leveraged **Amazon CloudWatch** for real-time monitoring and analysis of API Gateway and reverse proxy metrics, enabling **performance optimization** and reducing system downtime by 30%.
- Configured **AWS Route 53** for DNS management and leveraged AWS API Gateway's custom domain feature to **map custom domain names** to API Gateway endpoints, enhancing user accessibility to APIs by 70% and increasing API usage by 45%.
- Contributed to test automation initiatives and participated in **code reviews** to enhance product quality, improving code quality and reducing bugs by 35%, ensuring robustness and reliability across **IoT healthcare solutions** and backend systems.
- Adopted an **Agile** programming approach to facilitate iterative development, continuous integration, and collaborative teamwork, leveraging strong **problem-solving** and communication skills to address challenges promptly and effectively, leading to more efficient and adaptive software delivery.

## TECHNICAL PROJECTS

### Medical Operating Room Vitals & Stay Predictions | Python, EDA, Predictive Models, Stats

Nov 2023 – Dec 2023

- Achieved a 90% reduction in data size through **data cleaning, encoding, and feature selection**.
- Explored healthcare patterns, including gender and age-specific trends in diseases, post-operative complications, and hospital length of stay using **visualization and analytics** libraries like Plotly, Matplotlib, and Seaborn.
- Created **predictive models** for patient length of stay, achieving an 82% accuracy, helping hospitals better manage resources and patient flow.

### Should This Loan be Approved or Denied? | Python, SQL, EDA, ML Models

Nov 2023 – Dec 2023

- Performed **exploratory data analysis** to identify patterns and sectors with higher likelihoods of **loan default**, informing strategic lending decisions, and conducted a **finance** focused loan approval project to **predict** the likelihood of small and medium-sized businesses **failing to repay loans**, reducing the risk of loan defaults by 35%.
- Demonstrated the superiority of the Random Forest Classifier over Logistic Regression in predicting loan repayment capability, increasing prediction accuracy by 20%.

### Airbnb Database Design | PostgreSQL, Python

Feb 2024 – April 2024

- Designed a robust **database schema** comprising 8 entities to efficiently represent the dataset's structure and relationships, improving data organization by 50%.
- Applied **normalization techniques** to transform data into BCNF, ensuring data integrity and reducing redundancy by 70%.
- Implemented indexing strategies to **optimize query performance**, enhancing the efficiency of data retrieval operations and facilitating data by 60% and query analysis.

### Smart Bus Ticketing System | React, React Native, Node.js, MongoDB

Oct 2020 — May 2021

- Developed a full-fledged mobile application for conductors and passengers to manage the manual city bus ticketing system.
- After fare payment, produce a QR code for chosen origin and destination stops, which the conductor can scan for validation.

## TECHNICAL SKILLS

**Programming Languages:** Python, Java, C++, SQL, R, MATLAB

**Libraries:** PyTorch, TensorFlow, Seaborn, Matplotlib, Pandas, NumPy, Scikit-Learn, Plotly

**Frameworks:** Flask, Spring Boot

**Databases:** MySQL, MongoDB(NoSQL), SQL Server, PostgreSQL

**Analytics & Visualization Tools:** PowerBI, Tableau, Microsoft Excel, Google Analytics

**Cloud:** Amazon Web Services (AWS) - EC2, EBS, S3, ECR, ECS, RDS, Lambda (serverless), API Gateway, Greengrass Core, IoT Core, CloudWatch, EKS, Route 53, WAF, **Microsoft Azure** - Kubernetes Services, Container Instances, Storage Services, Azure SQL, IoT hub, Azure DevOps, App Services, Data Factory, Synapse Studio, Data Lake Storage

**Machine Learning:** Regression & Classification libraries - Linear, Logistic, Decision Tree, Random Forests, Cross Validation, SVM, K Means, PCA

**Statistics & Data Mining:** Hypothesis Testing, Time Series Analysis, Association rules

**Developer Tools:** Git, Docker, Visual Studio, Eclipse, Jenkins, NGINX, Linux, REST API, CI/CD pipelines, PowerShell, Bash, Postman, Confluence, Jira, ETL, SSL Certificates, Network Load Balancing