Bhavana Nare

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EDUCATION

Master of Computer Science Thesis

(Aug 2021 May 2023) University of Georgia, Athens, Georgia **GPA: 3.7/4**

Bachelor of Technology - Computer Science

(Oct 2010 Apr 2014) Sree Vidyanikethan Engineering College, Tirupati, Andhra Pradesh **GPA:7.9/10**

PROFESSIONAL SUMMARY

- Proficient in Python, C++, and JavaScript, with a strong foundation in database management and cloud services.
- Drove retrospective action items to closure, improving CI/CD reliability, reducing deployment rollbacks, and increasing automated test coverage across successive sprints.
- Partnered closely with Product Owners, QA, Security, and Platform teams in a cross-functional Agile setup to translate business requirements into groomed user stories with clear acceptance criteria.
- Leveraged Cursor AI for accelerated software development, including Automated unit test generation, Rapid conversion of notebooks into production microservices
- GraphQL and API Development are skilled in designing scalable APIs, RESTful services, and GraphQL queries for microservices architecture and real-time data aggregation for GitLab vulnerabilities.
- Currently working with cutting-edge technologies including Databricks, Hex, and implementing AI governance practices in MLOps workflows
- Currently working as Cloud Security Analyst implementing automated security patching tools, vulnerability assessment systems, and ML-based threat detection models
- Skilled in deploying robust AI and ML solutions, enhancing system functionalities, and driving operational efficiencies through automated workflows.
- My expertise encompasses designing and implementing scalable software solutions, managing end-to-end software development life cycles, and leading agile project teams.
- **Software Engineer and Full Stack Developer** with over 9 years of experience in **software development**, **system integration**, and **DevOps automation**, specializing in **Python**, **Django**, **Flask**, **React JS**, and **Cloud Technologies** like AWS and Azure.
- Automated workflows and data integration pipelines using Python and SQL, reducing manual processes and optimizing system updates.
- Utilized AWS services such as AWS Lambda, S3, and EC2 to enable event-driven workflows, scalable object storage, and compute-intensive tasks for real-time object detection.
- Built and maintained microservices architectures using Kubernetes, Docker, enabling modular, scalable, and maintainable systems.
- Automated CI/CD pipelines with Azure Pipelines, Git, and Terraform, dramatically improving deployment speed and **reducing** manual interventions.
- Experience with Kubernetes and Docker for containerized model deployment.
- Implemented logging and monitoring solutions for system health checks.
- Expertise in **Python Libraries** including NumPy, Pandas, scikit-learn, PyTorch, TensorFlow, and Matplotlib for data processing, machine learning, and AI applications.
- Proficient in developing scalable web applications using **Django**, **Flask**, **React JS**, and **Dash**, with backends powered by **PostgreSQL**, **SQLite**
- Performed advanced performance tuning on PostgreSQL, Snowflake, and DynamoDB, optimizing row- and column-oriented workloads through query refactoring, indexing strategies, partitioning, and execution plan analysis.
- Implemented end-to-end test automation using Docker and Jenkins to improve software validation and system integration.

- Hands-on experience in building **ML pipelines** integrated with AWS SageMaker and **AWS Lambda**, ensuring real-time data processing, deployment, and resource optimization.
- Experience with **computer vision projects**, including camera object detection, 2D-to-3D box mapping, and emergency braking assistance, using OpenCV and custom models.
- Designed and implemented robust **data pipelines** using **Snowflake**, **DynamoDB**, and SQL databases, ensuring scalability and efficient data storage.
- Followed **functional safety standards (ISO 26262)** and **cybersecurity (ISO 21434)**, with experience in ASIL compliance.
- Developed and maintained **automation frameworks**, including tools like csmcli and csmlint, to streamline deployment workflows using YAML configurations and Artifactory.
- Led end-to-end development for **AUTOSIM** and **IMS_DASHBOARD**, integrating cloud APIs, creating visualization tools, and reducing manual effort by up to 70%.
- Proficient in **Linux system administration**, shell scripting, and version control tools like **Git**, **Bitbucket**, and **Confluence** for project management.
- Experienced in building task management dashboards and workflow reporting tools, leveraging **React JS**, **Django**, and **AWS S3** for storage and real-time updates.
- Processed API requests or automates tasks, such as triggering events when new data is uploaded to S3 or handling backend logic for **AUTOSIM** workflows using **AWS** Lambda services
- Published research on a **Computational Trust Framework** at the University of Georgia, implementing machine learning models for dynamic trust scoring in human-robot teams. Computational Trust

TECHNICAL SKILLS

- **Programming Languages:** Python, C++, Django, Flask, Java, Unix Shell Scripting, React JS, MySQL
- **Frameworks & Platforms:** PyTorch, TensorFlow, Keras, OpenCV, scikit-learn, Pandas, Numpy, MLFlow, OpenAI Gym
- **Cloud Technologies:** AWS (S3, Lambda, CloudFormation, DynamoDB, SageMaker), Azure Pipelines
- **Automation & DevOps Tools:** Docker, Jenkins, Ansible, Terraform, CI/CD Pipelines, Bitbucket, Artifactory
- **Data Management:** Snowflake, PostgreSQL, SQLite, Oracle, AWS DynamoDB, SQL
- **Visualization Tools:** Plotly, Dash, Matplotlib, Draw.io
- **Testing & Debugging Tools:** SonarQube, PyYaml, Pylint, JSON
- **Software Development Life Cycle (SDLC):** Agile Methodology, V-Model, DevOps Practices
- **Version Control:** Git, GitHub, Bitbucket
- **Operating Systems:** Linux (Ubuntu, RedHat), macOS

Functional Expertise:

- **Machine Learning & AI:** ML pipeline development, clustering algorithms, trust modeling in human-robot systems, Bayesian models
- **Software Integration & Validation:** Middleware analysis, system debugging, testbench validation, end-to-end integration
- **Pipeline Automation:** CI/CD pipeline creation, PR automation, dependency management with Conan
- **Full Stack Development:** Flask, Django, Dash, React JS, SQL databases
- **Computer Vision:** Camera object detection, 2D to 3D box mapping, emergency braking assistance systems

PROFESSIONAL EXPERIENCE

Rivian Automotive, LLC May 2025 Present

Cybersecurity AI Analyst

Cybersecurity MOAB:

- **Technologies***:* Python, GraphQL, Databricks, Hex, SQL, GitLab, VERTEX AI

- **Key Contributions & Responsibilities:**
  - Designed and deployed Mechanic Patch Manager automations to streamline dependency security patching.
  - Architected "Beacon," an AI-assisted SAST platform that leverages Google Vertex AI to deliver exploitable security findings directly to CI/CD pipelines.
  - Designed resilient prompt orchestration with Jira context and Databricks feedback loops, cutting false positives >30% for regulated product teams.
  - Scaled scans across large via parallel execution, severity-aware reporting, and automated GitLab MR comment workflows.
  - Built Hex dashboards to prioritize high-risk dependencies and patch compliance and data is stored in databricks.
  - Aggregated dependency and vulnerability analytics via GraphQL services for real-time risk assessments.
  - Leveraged Cursor AI for accelerated software development, including Automated unit test generation, Rapid conversion of notebooks into production microservices
  - Used LLMs to read system/beacon alerts, error logs, and telemetry, then explain root causes and next repair steps in plain language, acting like a virtual mechanic guiding troubleshooting.
  - Added graphs and plots to Databricks dashboards to visualize security fixes and MR status (Open, Merged)
  - Integration slack bot to send notifications for new MRs created by fetching manager email from CODEOWNERS or Contributors.

Robert Bosch, Michigan August 2023 April 2025
Product Owner Python Engineer
System Safety Engineer & Software Integrator CSW (Complete Software)

- **Technologies***:* DOORS, Python, Shell Script, C++, JSON, Conan, Testbench Hardware, Azure, Django, Docker, Yaml, DynamoDB (No SQL) and ReactJS
- **Achievements:**
  - Reduced manual validation and testing efforts by 70% through end-to-end automation using tools like Jenkins, Docker, and Azure services.
  - Improved workflow efficiency and team productivity by automating PR creation and dependency management with Azure Pipelines and Conan modules.
  - Integrated Snowflake for real-time data analytics, improving the scalability and performance of ML pipelines.
  - Developed a robust framework for system safety compliance and validation, ensuring alignment with ISO standards across all development phases.

Continental Automotive India Private Limited, Bangalore, Karnataka May 2019 July 2021
System Engineer and Scrum Master ADAS Camera Object Detection

- **Camera Object Detection (COD) Computer Vision**
  - **Role:** System Engineer and Scrum Master
  - **Technologies:** Python, C++, Oracle, Doors, Dash, Flask, SQLite
  - **Achievements:**
    - Successfully integrated labeled data from Oracle databases for training object detection models.
    - Migrated object detection functionality from 2D box mapping to 3D box

mapping, improving system accuracy and performance.

- **AUTOSIM**
  - **Role:** Python AWS Developer
  - **Technologies:** Python, Django, ReactJS, AWS Services
  - **Achievements:**
    - Created a prototype for the COD component and expanded it to support multiple integrations, reducing manual effort by 70%.
    - Developed APIs for visualization and test analysis, enabling faster debugging and decision-making.
    - Leveraged AWS services for scalable API management and secure data storage.

Teradata India Private Limited, Hyderabad, Telangana Aug 2018 May 2019
Python Developer and Data Analyst
PYTERADATA: Tool to provide a Python interface for SQL Analytical Functions on Teradata Database.

- **Technologies:** Python, SQL, JAVA, JIRA and GIT
- **Achievements:**
  - Enhanced the development process by automating Python test case generation, reducing manual effort, and improving consistency.
  - Gained in-depth knowledge of advanced data analytical functions and their application on Teradata Database.
  - Improved team collaboration and productivity by actively participating in Agile ceremonies, including sprint planning and retrospectives.

Tata Consultancy Services Hyderabad, Telangana Jun 2014 Aug 2018
Senior Software Engineer

- **Technologies:** Python, Linux, VirtualBox, Jenkins, KIWI, Artifactory, Shell Scripting, PyYaml, Gerrit, SonarQube, Eforge, Confluence
- **Achievements:**
  - Enhanced deployment of reliability by automating the installation process for real and virtual nodes.
  - Improved testing efficiency with the seamless integration of functional test suites into Jenkins pipelines.
  - Designed and **implemented** innovative tools that improved deployment workflows, resulting in faster and more reliable releases.
  - Delivered comprehensive client demos of the tools, receiving positive feedback for significantly reducing release times, and efficiently addressing new requirements.