

# Bhavana Nare

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## PROFESSIONAL SUMMARY

- Proficient in Python, C++, JavaScript, Django, Flask, React JS, and cloud services across AWS and Azure.
- Designed scalable RESTful and GraphQL APIs for microservices architecture and real-time data aggregation.
- Lead AI governance and MLOps initiatives using Databricks, Hex, GitLab, and Vertex AI to secure developer platforms.
- Implement automated security patching, vulnerability assessment systems, and ML-based threat detection models.
- Deploy robust AI/ML solutions integrating NumPy, Pandas, scikit-learn, PyTorch, TensorFlow, and Matplotlib.
- Manage end-to-end software development life cycles with CI/CD, Terraform, Docker, Kubernetes, and Agile practices.
- Architect data pipelines on Snowflake, DynamoDB, PostgreSQL, and AWS serverless services for scalable analytics.
- Build computer-vision workflows including 2D-to-3D mapping, emergency braking, and camera object detection with OpenCV.
- Ensure compliance with ISO 26262 functional safety and ISO 21434 cybersecurity standards, including ASIL requirements.
- Created automation frameworks (csmcli, csmlint, CSM Config, csm2iso) reducing manual deployment work by up to 70%.
- Led AUTOSIM and IMS\_DASHBOARD initiatives integrating cloud APIs, data visualization, and KPI automation.
- Experienced in Linux administration, shell scripting, Git/Bitbucket/Confluence collaboration, and Agile ceremonies.
- Published IEEE Xplore research on computational trust for human-robot collaboration.

## WORK EXPERIENCE

### Cybersecurity AI Analyst | Rivian Automotive, LLC

May 2025 – Present | Remote, USA

- Designed and deployed Mechanic Patch Manager automations to streamline dependency security patching.
- Architected “Beacon,” an AI-assisted SAST platform that leverages Google Vertex AI (Gemini 2.5 Pro) to deliver exploitable security findings directly in 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 monorepos via parallel execution, severity-aware reporting, and automated GitLab MR comment workflows.
- Built Databricks pipelines and Hex dashboards to prioritize high-risk dependencies and patch compliance.
- Aggregated dependency and vulnerability analytics via GraphQL services for real-time risk assessments.
- Implemented ML-driven reviewer recommendations and anomaly detection to accelerate developer response.
- Partnered with security, ML, and platform teams to align tooling with AI governance and compliance standards.
- Led cross-functional ceremonies to clarify requirements, unblock delivery, and track continuous improvement.
- Ensured engineering squads had single sources of truth for functionality, release scope, and process metrics.
- 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.

## **Product Owner – Python Engineer | System Safety Engineer & Software Integrator (CSW) | Robert Bosch, Michigan**

*August 2023 – April 2025 | Michigan, USA*

- Developed resilient cloud-native services using Azure, Docker, Kubernetes, and Terraform for automotive platforms.
- Built Django REST APIs integrated with ML models for real-time diagnostics and analytics.
- Automated CI/CD pipelines with Azure Pipelines and Git, reducing deployment time and manual interventions.
- Conducted hardware-in-the-loop testing and monitoring to ensure reliability and performance.
- Coordinated ISO 26262 and ASPIRE compliance reviews and documentation with cross-functional teams.
- Implemented observability, logging, and automated alerts across distributed microservices.
- Managed dependency orchestration and YAML-based configuration for scalable deployments.
- Enhanced API validation and security, ensuring high availability of cloud-native components.
- Led development of a PR Statistics Dashboard (Flask + React + AWS SageMaker) to forecast review SLAs, containerized with Docker and scaling to 1K req/sec.
- Reduced manual validation and testing efforts by 70% through Jenkins and Docker automation.
- Automated PR creation and dependency management using Azure Pipelines and Conan modules.
- Integrated Snowflake analytics to improve scalability and performance of ML pipelines.
- Developed a robust framework for system safety compliance aligned with ISO standards across all phases.

## **Scrum Master – ADAS Camera Object Detection, Tool Architect & Developer for AUTOSIM & TM\_KPI\_PORTAL | Continental Automotive India Private Limited**

*May 2019 – July 2021 | Bangalore, India*

- Designed scalable computer-vision solutions for ADAS, enhancing models with Kalman filters and 3D mapping.
- End-to-end AWS-driven automation and visualization platform supporting ADAS testing and reporting
- Developed simulation frameworks to validate localization algorithms under varied environmental conditions.
- Automated AWS workflows (Lambda, S3, DynamoDB) for large-scale data ingestion and processing.
- Coordinated Agile ceremonies, sprint planning, and cross-functional collaboration for on-time delivery.
- Implemented CI/CD pipelines on AWS for rapid deployment of vision services and APIs.
- Streamlined data labeling, training, and deployment processes for camera object detection models.
- Documented system designs, project progress, and deployment configurations for stakeholders.
- Built Python services for KPI processing with DynamoDB persistence and S3 data storage.
- Created React/Django dashboards enabling real-time telemetry visualization and configuration management.
- Reduced manual effort by 70% through event-driven workflows and automated reporting.
- Integrated Oracle-labeled datasets to improve training fidelity for detection models.
- Migrated object detection from 2D to 3D mapping, significantly improving system accuracy.
- Created AUTOSIM prototype supporting multiple integrations, reducing manual effort by 70%.
- Developed visualization APIs and dashboards to accelerate debugging and decision-making.

## **Python Developer and Data Analyst | Teradata India Private Limited**

*August 2018 – May 2019 | Hyderabad, India*

- Designed APIs for PYTERADATA, enabling Python integration with SQL analytical functions on Teradata.
- Automated Python test-file generation from JSON inputs to improve coverage and consistency.
- Worked with analytical algorithms (NTREE, DecisionTree, KNN) to drive data insights.
- Collaborated with cross-functional teams through Agile ceremonies to deliver iterative enhancements.
- Utilized SQL expertise for validation of analytical functions and performance tuning.
- Automated Python test-case generation, reducing manual effort and improving delivery speed.
- Developed advanced knowledge of Teradata analytical functions and their applications.

- Improved collaboration and productivity by actively participating in Agile sprint ceremonies.

## **Senior Software Engineer | Tata Consultancy Services**

June 2014 – August 2018 | Hyderabad, India

- Automated installation of telecom components across real and virtual nodes using Python and Linux.
- Created and managed VirtualBox environments simulating deployment scenarios.
- Integrated functional test suites with Jenkins CI/CD pipelines for continuous validation.
- Developed tooling (csmcli, csmlint, CSM Config, csm2iso) to streamline configuration and deployment workflows.
- Automated package management with Artifactory Manager supporting XML-based downloads and updates.
- Collaborated with operations teams to ensure reliable, repeatable software releases.
- Enhanced deployment reliability by automating installation processes across environments.
- Reduced release times through improved tooling and CI/CD integration.
- Delivered client demos highlighting automation gains and adoption benefits.

## **EDUCATION**

Master of Computer Science (Thesis) | Computer Science | University of Georgia, Athens, Georgia

August 2021 – May 2023

GPA: 3.7/4.0

Bachelor of Technology | Computer Science | Sree Vidyanikethan Engineering College, Tirupati, Andhra Pradesh

October 2010 – April 2014

GPA: 7.9/10

## **TECHNICAL SKILLS**

- Programming Languages: Python, C++, JavaScript, Java, React JS, Django, Flask, Unix Shell Scripting, MySQL
- Frameworks & Platforms: PyTorch, TensorFlow, Keras, OpenCV, scikit-learn, Pandas, NumPy, MLFlow, OpenAI Gym
- Cloud & DevOps: AWS (S3, Lambda, CloudFormation, DynamoDB, SageMaker), Azure Pipelines, Docker, Kubernetes, Jenkins, Terraform, Ansible, Bitbucket, Artifactory, CI/CD Pipelines
- Data Management: Snowflake, PostgreSQL, SQLite, Oracle, AWS DynamoDB, SQL
- Visualization & Tools: Plotly, Dash, Matplotlib, Draw.io
- Testing & Debugging: SonarQube, PyYAML, Pylint, JSON Tooling
- Operating Systems: Linux (Ubuntu, RedHat), macOS

## **KEY ACHIEVEMENTS**

- Enhanced deployment reliability by automating installation processes across environments.
- Reduced release times through improved tooling and CI/CD integration.
- Delivered client demos highlighting automation gains and adoption benefits.

## **PUBLICATIONS**

Computational Trust Framework for Human-Robot Teams — IEEE Xplore (Document 11127674) | May 2023 | <https://ieeexplore.ieee.org/document/11127674>

Machine-learning research on dynamic trust scoring and safety alignment for collaborative robotics.