Atul T Varghese

Senior Python Developer

📧 atultvarghese@gmail.com | 📱 +91 9656532700 | 🌐 linkedin.com/in/atultvarghese | 📍 Bangalore

Professional Summary

Highly analytical and results-oriented Senior Python Developer with 5 years of experience in software development, specializing in data science, machine learning, Android Automotive OS (AAOS), and embedded systems. Proficient in Python, Flask, Django, and data analytics frameworks with a proven ability to develop scalable test frameworks, data pipelines, and analytics tools for ADAS applications.

Key Highlights

- 5 years of experience in Software Development including AAOS and SDV architecture.
- Developed complete end-to-end testing frameworks using Python, Jinja2, and Shell scripting.
- Extensive experience in ADAS data analytics for AEB, ACC, and BSM features.
- Product Owner and core developer of ADAS algorithm validation platforms.
- Developed Android OS features including HAL layer customization and emulator testing.
- Hands-on with ML/DL pipelines using PyTorch, TensorFlow, and Scikit-learn.
- Strong foundation in web frameworks: Flask, Django, Node.js.
- Experienced in MySQL, MongoDB, Git, Docker, and CI/CD pipelines.

Technical Skills

- Languages: Python, JavaScript, Rust, SQL, C++, HTML, CSS
- Web Frameworks: Flask, Django, Node.js
- Databases: MySQL, MongoDB
- ML/DL: TensorFlow, Keras, PyTorch, Scikit-learn, OpenCV
- Data Analysis: Pandas, NumPy, Scipy, Regex
- Visualization: Matplotlib, Plotly, Bokeh
- Platforms: Linux, Windows, Android, Google Cloud, HPC Clusters (Slurm)
- Deployment & Tools: Git, Docker, Singularity, Android Studio, CANoe, Jinja2, PyInstaller

Professional Experience

Senior Software Engineer – Randstad Digital

Jan 2024 – Present | Bangalore

- Developed a Proof of Concept (POC) for an AI-based system requirement generation tool using RAG architecture, incorporating FAISS for vector search and LangChain for orchestration.
- Developed integration test frameworks for AAOS in SOC using Python and Jinja2 for Rust code generation.
- Trained on AOSP, Kotlin, SQL, and Android Automotive OS.
- Created custom modules in the Android OS HAL layer on the vendor partition.
- Built system apps with minimal HMI and SELinux policy customizations.

Product Owner – Aptiv

Apr 2021 – Dec 2023 | Bangalore

- Owned and developed web framework to evaluate ADAS algorithms on HPC clusters.
- Converted stakeholder requirements into POCs and implemented productized solutions.
- Led Agile ceremonies: standups, planning, retrospectives.
- Developed analytics scripts for radar and camera log data from real-world tests.

AI Engineer Trainee – Symptots

Sep 2020 – Apr 2021 | Calicut, Kerala

- Developed ML algorithms using random forest for device prediction.
- Created energy consumption forecasts with ARIMA models.
- Implemented TCP socket listeners for IoT communication.
- Built image processing systems from multi-camera feeds using OpenCV.

Projects

Algooee (algooee.in)

Automated algorithmic trading platform (beta) featuring a machine learning dashboard for market prediction and insights, hosted on AWS EC2. Paper trading facility for learning trade, event-driven backtesting engine for historical data analysis. component-based React architecture utilizing custom hooks and optimized state management.

Health Monitoring Android OS

System app development for hardware data display with minimal UI. HAL layer module development using AIDL and SELinux policy customization. OS building and testing on cuttlefish emulator.

Regression Test Framework
Designed test frameworks for ADAS algorithm validation. Handled requirement analysis, CI/CD deployment, and 3L5Y root cause issue resolution.

Data Analytics
Created data mining scripts and validation reports using Python.

Device Monitoring and Prediction
Built energy value calculators and IoT-backend communications.

Optical Character Recognizer
Developed object detection algorithms, datasets, and ML model pipelines.

Education

Bachelor of Technology in Computer Science and Engineering
APJ Abdul Kalam Technological University – MGM College of Engineering, Kerala

2016 – 2020 | CGPA: 7.66

Project: ML-based Human-Computer Interaction for differently-abled users using webcam input. Technologies: Dlib, OpenCV, PyAutoGUI.