

JAYASEELAN JAMES

Stuttgart, Germany
Email: jayaseelan0710@gmail.com
Mobile: +49 160 1467607
LinkedIn: jayaseelan-j
GitHub: jayaseelan-james

Summary

Master's student in Electrical Engineering specialising in Robotics and Automation, with 3 years of professional software engineering experience. Hands-on experience in ROS/ROS2, Python, MoveIt, MuJoCo, RGB-D perception, motion planning and Franka Panda. Interested in mobile robotics and intelligent robot systems.

Education

Master of Science – Electrical Engineering (Smart Systems) Oct 2025–Present
University of Stuttgart, Stuttgart, Germany
Relevant Coursework: ROS Lab, Industrial Automation Systems, Modeling & Analysis of Automation Systems

Bachelor of Engineering – Electronics and Communication Engineering Jun 2018–May 2022
St. Joseph's College of Engineering, Chennai, India
CGPA: 9.03 / 10 (German Grade: 1.7)

Technical Skills

Robotics & Simulation	ROS, ROS2, MoveIt, RViz, Gazebo, URDF, MuJoCo, OMPL, Kinematics
Computer Vision	RGB-D perception, depth processing, pose estimation, hand-eye calibration
Programming Languages	Python, C++, C#, C
Development Environment	Linux, Git, Docker, Visual Studio, Visual Studio Code, Azure DevOps

Academic Projects

FrankaChess: An Autonomous Vision-Guided Chess-Playing Robot May 2026–July 2026
University of Stuttgart, Stuttgart, Germany

- Developed & tested ROS-based autonomous chess robot using Franka Panda, MoveIt, and RGB-D vision.
- Designed an RGB-D perception pipeline with depth-colour fusion and multi-frame voting.
- Computed 3D piece poses and grasp points using depth localisation from RGB-D camera data.
- Implemented motion planning using MoveIt, OMPL, Cartesian trajectories, with force-aware grasping.
- Performed hand-eye calibration using ChArUco board and MoveIt Calibration GUI.

Camera-Based Dual-Arm Teleoperation using ROS 2 and MuJoCo Apr 2026
University of Stuttgart, Stuttgart, Germany

- Developed a ROS2 dual-arm teleoperation & human-robot interaction system for Panda arms in MuJoCo.
- Built 30 Hz vision-based hand tracking with pose estimation, wrist rotation, and EMA filtering.
- Mapped camera motion to bounded robot workspaces using scaling, clamping, and rate limits.
- Implemented Jacobian-based Damped Least-Squares IK for smooth dual-arm joint targets.
- Added collision checks, joint limits, and synchronised dual-arm trajectory control.

Professional Experience

Soliton Technologies Pvt. Ltd. Coimbatore, India
Senior Project Engineer May 2024–Jul 2025

- Led 3 C# software prototypes from concept to production for a post-silicon validation framework.
- Designed and developed 2 key Python features for a semiconductor test & validation software.
- Collaborated with cross-functional teams to develop & deliver a production-ready automation framework.

Project Engineer Jun 2022–Apr 2024

- Built 2 Python microservices for test & measurement hardware, integrating software with instruments.
- Created 4 reusable Python measurement examples, improving test accuracy and customer adoption.
- Developed software framework features in Python & C# for an automated test and validation framework.

Leadership & Activities

Technology Quest (Internal Engineering Initiative) Nov 2024–Jul 2025

- Founded and organised recurring Python and C# technical quizzes and hackathons, promoting problem-solving and strengthening software engineering practices within the team.

Clean Code & Technical Community Initiatives Feb 2024–Sep 2024

- Led org-wide Python Clean Code competition and technical learning sessions, contributing to improved coding standards and knowledge sharing across engineering teams.

Honours & Awards

Standout Performer Award — Awarded for innovation, ownership, and high-value solutions. May 2025
Above & Beyond Award — Mentored juniors and led org-level initiatives successfully. Feb 2024
Star Soliton Award — Outstanding contributions as a newcomer in the organisation. Feb 2023

Languages

English C1 (CEFR)
German A2 (CEFR, actively learning)
Tamil Native