

Rahul Kambhampati | Automotive Solution Architect

ECU Virtualization | Virtual Validation | SDV | vECU | AUTOSAR | SIL/VIL | CI/CV

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11+

YEARS EXPERIENCE

8+

YRS VECU / SIL

5

GLOBAL REGIONS

2

EXCELLENCE AWARDS

PROFESSIONAL SUMMARY

Automotive Embedded Systems and Virtualization professional with 11+ years of engineering experience, including 8+ years specialized in Model-Based Testing, ECU Virtualization, Virtual SIL/VIL Validation, AUTOSAR integration, Software Defined Vehicle (SDV), Zonal Architecture, and automotive simulation. Currently a Technical Lead operating with a Solution Architect mindset — designing virtual validation environments, integrating multi-ECU configurations, developing Virtual ECU solutions, enabling CI/CV pipelines, and leading technical PoC initiatives for global automotive OEM and Tier-1 programs. Translates complex ECU, software, network, and validation requirements into scalable virtual engineering solutions while collaborating with stakeholders across Germany, France, USA, South Korea, and Japan.

CORE COMPETENCIES

- ▶ Automotive Solution Architecture
- ▶ ECU Virtualization / vECU
- ▶ Virtual SIL / VIL / HIL
- ▶ SDV & Zonal Architecture
- ▶ Model-Based Testing
- ▶ dSPACE VEOS / SystemDesk / ControlDesk
- ▶ AUTOSAR (ASW / BSW / MCAL)
- ▶ Multi-ECU Simulation
- ▶ Rest-Bus & FMU Co-Simulation
- ▶ CI/CV Automation (Jenkins, Docker, Python)
- ▶ Plant Model Integration
- ▶ Vector SIL Kit / CanSilKit / PROVEtech

PROFESSIONAL EXPERIENCE

Technical Lead – Automotive Virtual Validation

Feb 2024 – Present

Akkodis India | Bengaluru

- ▶ Lead technical architecture and implementation of CI/CV-based Virtual Validation environments for automotive ECU software.
- ▶ Architect end-to-end virtual test environments for BCM and IPC components, enabling validation ahead of physical ECU hardware.
- ▶ Design multi-ECU environments using dSPACE SystemDesk and VEOS; lead CAN/LIN integration and troubleshooting.
- ▶ Extend Python automation across SystemDesk, VEOS and ControlDesk APIs, improving repeatability and reducing manual effort.
- ▶ Design Vector SIL Kit / CanSilKit rest-bus integration and FMU-based co-simulation workflows with PROVEtech Re.

Key Achievement: Akkodis Rockstar Rookie Award – H1 2024 for exceptional client delivery and technical innovation.

Technical Lead – SDV & Zonal Architecture

Aug 2023 – Feb 2024

KPIT Technologies | Bengaluru

- ▶ Led technical delivery for SDV and Zonal Architecture validation; delivered Level 3 Virtual ECU solutions for Zonal Front/Rear.
- ▶ Integrated the KPIT ECU Validator Tool in headless mode with VEOS Player inside Windows Docker containers for automated CI.
- ▶ Designed an AWS Graviton + VEOS co-simulation pipeline exploring cloud-native HPC for virtual validation.

Key Achievement: Selected to own and present complex SDV/Zonal Architecture PoC work at engineering conferences.

Technical Lead – Virtual ECU & Embedded Integration

Jun 2022 – Aug 2023

KPIT Technologies | Bengaluru

- ▶ Architected a non-AUTOSAR Virtual ECU using a code-based approach, extending validation beyond standard AUTOSAR toolchains.
- ▶ Developed Embedded C for DAP Port creation within BSW modules; configured OS, DAP and SAB components in SystemDesk.
- ▶ Designed virtual ECU functionality covering PWM I/O, LIN, Discrete I/O and SENT switches.

Key Achievement: Delivered defect-free software via white-box testing in Virtual SIL, with zero field escapes

Senior Software Engineer – Model-Based Testing

Apr 2019 – Jun 2022

KPIT Technologies | Bengaluru

- ▶ Developed automated MIL/SIL testing for automotive braking and steering Simulink subsystems (South Korean Tier-1 / USA program).
- ▶ Implemented Simulink Design Verifier for automated test-case generation and design-error detection.
- ▶ Led a small team delivering Model Advisor scripts with unit testing and requirements traceability (Japan–France Tier-1 OEM).
- ▶ Mentored junior engineers in Model-Based Testing methodologies and engineering best practices.

Key Achievement: KPIT Krown Award for technical contribution and delivery excellence.

Senior MATLAB Engineer / Software Engineer

Datapoint Info Solutions / KPIT Technologies | Pune

▶ Developed MATLAB/Simulink models and control algorithms for embedded and electrical engineering applications.

▶ Authored test cases aligned with Product Change Requests; supported HIL test-bench validation.

Jul 2014 – Mar 2017

Research Associate

Tennessee Technological University, USA | Cookeville, TN

▶ Designed DFIG-based wind turbine power generation models and microgrid control algorithms.

▶ Conducted research on Smart Grid architectures and distributed generation system stability.

Aug 2009 – May 2011

OTHER EXPERIENCE

- ▶ Freelance Consultant | Independent Engineering Consultant | Mar 2017 – Apr 2019 | Hyderabad
- ▶ iAchieve Group Inc. | Entrepreneur | Jun 2015 – Jul 2016 | Hyderabad

EARLY CAREER & INTERSHIPS

- ▶ INNOFAB INDIA PRIVATE LIMITED | Engineering Intern | Apr 2013 – Aug 2014 | Hyderabad
- ▶ ADITI SOLAR PRIVATE LIMITED | Engineering Intern | Jan 2012 – Apr 2013 | Hyderabad
- ▶ SKOLIX | WebLogic Administrator Intern | Jun 2011 – Dec 2011 | Dallas/Fort Worth Area, USA

AWARDS & RECOGNITION

★ Akkodis Rockstar Rookie Award – H1 2024 Exceptional technical delivery, client satisfaction and innovation in virtual validation projects.	★ KPIT Krown Award – 2021 Led a small team, reducing defect rates and improving customer satisfaction.
★ Conference Presenter, KPIT (2023–2024) Selected to represent SDV & Zonal Architecture PoC initiatives at engineering conferences.	★ International Project Selection – PROVEtech, Germany (2024) Selected for international engagement based on technical expertise and delivery reliability.

EDUCATION

Executive Post Graduate Certificate Program In General Management	IIM Visakhapatnam	2026–27 (Pursuing)
M.S., Electrical Engineering	Tennessee Tech University, USA	2011
B.Tech., Electrical Engineering	GRIET, JNTU	2008

LICENSES & CERTIFICATIONS

- ▶ ConfQ-2025 Participant | SAJO Academy (Private Limited) Issued Nov 2025 | Credential ID: 16168096601323
- ▶ MATLAB for Engineers: A Hands-on Approach to Modeling and Simulation | School of EEE | Issued May 2025 | Credential ID: REVA/EEE/2025/002
- ▶ Foundational Simulink | MathWorks | Issued Dec 2024
- ▶ Modeling and Simulation with Simulink | MathWorks | Issued Dec 2024 | Credential ID: Y5V6SDX3W1BP
- ▶ Introduction to Docker | Coursera | Issued Nov 2023 | Credential ID: R8PKBRD4KNEY
- ▶ Learning Jenkins | LinkedIn Learning | Issued May 2021
- ▶ Embedded Coder for Production Code Generation | MathWorks | Issued Mar 2021
- ▶ Autosar from Scratch | Udemy | Issued May 2020 | Credential ID: UC-d93761c4-b4b7-4861-a064-8aa41e2843f8
- ▶ Introduction to Programming with MATLAB | Coursera | Issued Feb 2019 | Credential ID: E6H92QBK7SHY
- ▶ Certified Automation Engineer | Prolific Systems & Technologies Pvt. Ltd. | Issued May 2014 | Credential ID: 24-2014/PGDIA/13895/78585

PROJECTS IMPLEMENTED

- ▶ AI-Assisted Automated Test Script Generation & Virtual Validation | Akkodis | 2025 – Present
- ▶ Vector SIL Kit + PROVEtech:RE Virtual Bus Integration | Akkodis | 2025 – Present
- ▶ FMU-Based Virtual Validation Solution | Akkodis | 2025 – Present
- ▶ Robot Framework + PROVEtech:RE Automation | Akkodis | 2025 – Present
- ▶ CI/CV-Based ECU Virtual Validation | Akkodis | 2024 – 2025
- ▶ SDV & Zonal Architecture Virtual ECU | KPIT | 2022 – 2024
- ▶ Non-AUTOSAR Virtual ECU & SIL Validation | KPIT | 2021 – 2022
- ▶ MIL/SIL Model-Based Testing Automation | KPIT | 2019 – 2021