Akash A Panhale

Senior Engineer at ZF Technology Center India

Enthusiastic and results-driven Engineer with over 4 years of professional experience in system modeling and robust control system domain. Highly observant and detail oriented, with a stellar record of completion of projects ahead of schedule and under budget.

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Objective

To secure a challenging role as a Model-Based Development Engineer where I can utilize my skills and expertise in designing, developing and testing complex control systems using simulation tools and software, with the goal of achieving optimal performance, efficiency and reliability in the final product.

WORK EXPERIENCE

Organization: ZF TCI, Hyderabad
Designation: Senior Engineer
Project: Active kinematics control
Duration: *May 2021 – Present*

Project Details: Modeling and simulation of Active kinematics Control system i.e., Rear-wheel steering system for big giants in automotive industry.
Benefits- Improvement in stability, agility, handling of vehicle, and reduction in turning radius.
Roles and Responsibilities:

- Develop MATLAB/Simulink system model as per the functional requirement(PMSM Motor & Mechanics model)
- Integrate AUTOSAR architecture-based source code with Simulink model for MIL/SIL testing
- Integration of Amesim mechanics model in Matlab environment (1D modeling- Cosimulation)
- Verification of dynamic model with standard signals and validation of model with real-time test rig data
- Develop MATLAB scripts for automating processes
- Coordinate with cross functional teams
- Delivery of encrypted FMU and black box models to clients
- Participate in customer meeting and resolve raised issues within given timeline

Organization: Cognizant Technology Solutions, Pune
Designation: Programmer Analyst Trainee
Duration: *Nov 2020 – May 2021*

Project Details: Worked on ETL development, SQL, Informatica powerenter, Cognos, Logic development for data analysis and data handling
Roles and Responsibilities: Requirement Gathering, Data handling, Data processing, Data analysis, Performance improvement of system, Reporting

EDUCATION

❖ **Collage: College of Engineering– Pune, Maharashtra, India**
Course: Master of Technology – Embedded Control system (Electrical Engineering)
Duration: *September 2018 – October 2020*
- CGPA: 8.89/10

❖ **Collage: Rajarambapu Institute of Technology Islampur, Maharashtra, India**
Course: Bachelor of Technology – Electrical Engineering
Duration: *June 2014 – May 2018*
- CGPA: 8.22/10

SKILLS

Programming Languages:
C++, Embedded C, M-scripting

Technical Skills:

Model Based Development, MIL, SIL, HIL, FMU generation, S- function, Verification and Validation

Tools:
MATLAB, Simulink, Stateflow, Simscape, Amesim, Control system toolbox, DOORS, Vector tools, dSPACE, QUARC (RTI) Microsoft products, LaTex, AutoCAD, Aurdino, Proteus, PLC programming SW tools

IDE:
Eclipse, MS visual Studio, Code Composer Studio

Organization: Bharat Forge LTD, Pune
Designation: GET (Vehicle Integration)
Project: Armored Personal Carrier Vehicle for UN
Duration: *Jun 2018 – Sept 2018*

Project Details: Aim of project was to build a prototype of APC vehicle. My primary responsibilities were focused on electrical systems.

Roles and Responsibilities:

- Looking after the defense vehicle Electrical Wiring Harness
- Understanding the circuit Schematics and implementation on vehicle
- Selection of the components, fuses and connectors by analyzing the vehicle data
- Proto building for defense projects
- Rectification of the failures raised during trials

Organization: n-GEn Controls System, Pune
Designation: Student Intern
Project: Pick and Place System for punching machine
Duration: Jan 2018 – May 2018

Project Details: Development of punching machine for reducing manual effort. Mechanism Developed to pick up single sheet from stack then put below the cutter, then collect the required patches and remove extra portion from sheet.

Roles and Responsibilities:

- Preparing BOM and do calculation for selection of component
- Control Panel designing in AutoCAD and actual implementation
- Logic Development and HMI interfacing
- Motor connection with starter and drives
- Testing and troubleshooting of projects

Organization: College of Engineering, Pune
Designation: Teaching Assistant
Duration: *Sept 2018 – Oct 2020*

Roles and Responsibilities: Conduction of Control System Lab and Embedded System Lab

Project: Investigation of New Algorithms in Sliding Mode Control
Objective: Development of new algorithm to yield more degree of smoothness in control with more accuracy and finite time convergence. State and disturbance estimation for efficient control.

Outcome: Proposal of Novel First Order SMC and Modified Higher Order Sliding Mode Control Algorithm for application to large class of systems

- Mathematical modeling of Motion control system and Buck converter and robust controlling using proposed algorithms
- Design of Observer/Estimator for state and disturbance estimation.
- Simulation (MIL) and Experimental implementation (HIL using dSPACE for RTI) of developed algorithm on i) DC/DC Buck Converter for robust output voltage control and on ii) Servo Motor for position control.

AWARDS

- Excellence award in Q1 of 2022
- Pinnacle award for being top performer in C DIV at ZF for year 2022
- Communication and collaboration award for collaborating different teams
- Spot award for gEPS idea

ACHIEVEMENTS

- Outstanding rating in the appraisal
- Research paper talk on Application of Digital Twin for chassis advance system in ZF Tech Conclave 2022
- Secured Gate score-463/1000 (2018) and 400/1000 (2019)
- Secured Elite + Silver Medal in Electric Vehicles Part 1 organized by NPTEL
- Secured Elite + Silver Medal in Fuzzy Logic & Neural Network organized by NPTEL
- Secured Elite in Control Engineering organized by NPTEL

PUBLICATIONS

- Akash Panhale and Shailaja Kurode, “Robust Motion Control using Novel First Order Sliding Modes”, 20th International Conference on Control, Automation and Systems (ICCAS 2020) during Oct. 13-16, 2020 at BEXCO, Busan, Korea.
- Akash Panhale and Shailaja Kurode, “Robust Control using Modified Continuous Twisting Algorithm for Motion Control System”, 17th Control Instrumentation System Conference (CISCON 2020) during Oct. 30-31, 2020 at Manipal, India.

LANGUAGES

English, Marathi and Hindi

PERSONAL DETAILS

Nationality – Indian
DOB – 27th June 1996
Gender – Male
Marital status – Unmarried