Akshay A. Yerunkar

E-mail: akshayyerunkar05@gmail.com
Mob: +91-9167548810.

Address: A/ 205, Sai Bhakti CHS, Opp. Sai temple, Shirdi Nagar, Bhayander (East), Thane 401105, Maharashtra.

Professional Summary:

Passionate engineer with around 7+ years of experience in Autonomous Vehicles Controls, Vehicle Routing, Automated Traffic Control, Automotive Controls, Computer Vision For ADAS, Material Handling Systems and Motor Controls.

Professional Experience:

Vanderlande Industries Pvt Ltd, Pune

(March 2022 to till date)

as Sr. Lead Engineer – Research and Development

Working on traffic control and routing algorithms for Fleet Management Systems (FMS). Algorithms for Autonomous Vehicle (AV) based on Mosaic concept is developed in MATLAB m-script. JIRA and Bit-Bucket (GIT) is used for continuous development process. Agile methodology is used for planning the work.

Responsibilities:

- Fix scope of user stories based on discussion with Product owner.
- Create design flow for changes to be done in user stories.
- Estimate story points based on complexity, quantity of work and available knowledge of dependencies.
- Implement changes for user stories.
- Review changes by other developers to ensure changes meets requirements and quality.
- Create progress report for stake holders at every sprint end.

Notable work:

- Worked on routing of AV along with few restructurings to improve runtime performance.
- Worked on traffic control of AVs to improve system scalability and avoid deadlocks.
- Worked on investigating runtime improvements and implement them.
- Worked on job provider module.

John Deere India Pvt Ltd, Pune

(July 2021 to February 2022)

as Senior Engineer II

Worked on software development for communication between Autonomous Tractors and implements on ISOBUS. Used C language for software development. Rally, and code collaborator is used for change management along with SVN for version control. JIRA is used for continuous software integration. Contributed to development for software based on AEF guidelines throughout software lifecycle for communication between tractor and its implement.

Responsibilities:

- Implement changes for user stories.
- Perform release related work and represent team in release meeting.

Cummins Technical Center India, Pune

(September 2017 to July2021)

as Senior Electronic Controls Engineer

Worked on software development for various electronically controlled engine programs. Used MATLAB for software development. PTC Integrity for change management. Cummins proprietary software repository and Build-forge execution framework for continuous integration. Contributed to development of cascaded control software throughout software lifecycle for engines with different capacities and used for varied applications.

Notable work:

- Worked on Model Referencing based implementation, to develop simulation capability of cascaded control algorithm.
- Supported vehicle integration team to calibrate control features on vehicle.
- Analyzed effect of interpolating torque curves vs. curve switching on vehicle fuel economy. Used CyberApps simulation platform to test the hypothesis on vehicle model. Analysis concluded interpolation is not providing better fuel economy compared to torque switching.

Other Recognitions:

- Recognized for creating team training database.
- Represented team at Cummins Controls India Electronics Technology Day conference.
- Recognized for leadership mentoring program for mentees as core team member.

CoE-CNDS, VJTI Mumbai

(22nd September 2014 to 22nd July 2015)

as Junior Research Fellow

Cyber Physical Test Bed:

- Used for testing vulnerabilities in PLC for various cyber-attacks (like Denial of Service, Man in middle attack etc.).
- Includes sensors connected via internet to a server device. This system contains SCADA based control. Another system connected via internet to this network reads data from peers and manipulate it to generate cyber-attack.
- Supervised implementation of system in CoE-CNDS.

Linear Induction Motor:

- Prepared proof of concept for “Design and control of linear induction motor” in collaboration with L&T Automation.
- Formulated and implemented mathematical model of linear induction motor in MATLAB.
- The model will be used to device aircraft launch system.

Protech Engineering & Controls Pvt. Ltd (09th June 2014 to 20th September 2014)

as Junior R & D Engineer

Automatic Phase Selector Switch (APSS):

- APSS is used as converter where supply is three phase and loads are single-phase.
- Tolerance of components caused output of amplifiers to saturate ADC input. Hence, max output was not achieved.
- Fault was diagnosed and rectified in further manufactured units.

Internship:

L&T Technology Services (03rd August 2016 to 5th July 2017)

as Intern

Frequency Spectrum Based Segmentation of the Repeated Pattern:

- Developed pattern recognition algorithm using C++ and OpenCV to segment the periodic patterns in video dataset.
- Applied Discrete Fourier Transform and Discrete Cosine Transform to segment periodic data in multiple frames.

360º Surround View:

- Developed an algorithm (in C++) using OpenCV libraries to generate the top view of car.
- Applied Zhang’s Distortion correction and perspective transform algorithm for generating top view using four cameras.

Educational Qualification:

Course	School / College	Board University	Year of Completion	Percentage / CGPA
M. Tech (Automotive Electronics)	TIFAC	VIT University	2017	9.18 (CGPA)
B.E. (Electronics)	G. H. Raisoni College of Engineering.	Pune University	2013	64.80 %
HSC	Nirmala Memorial College	Maharashtra Board	2008	65.33 %
SSC	St. Francis High School	Maharashtra Board	2006	72.66 %

Research Publication and Patent:

- Afshan Mulla, Jaypal Baviskar, **Akshay Yerunkar,** "Convergence of Wireless Sensor Network with Smart Grid Environment Based on IPv6 Protocol", published at International Conference on Communication System and Network Technologies (CSNT) 2015, 4-6 April 2015.
- **Akshay Yerunkar**, Ashok Nallamilli, Ramesh Babu D, Gopinath C. "Wide-Angle Lens Distortion Correction" Indian Patent. Application no. 201741034258A published on 13th December 2019.

Technical Knowledge:

Software:

Matlab

Simulink (Model based development)

Languages:

C

C++

Personal Details:

Date of Birth: 05th December 1990.
Marital Status: Married.
Nationality: Indian.
Languages Known: English, Hindi, and Marathi.

Declaration:

I hereby declare that the above-mentioned information is true to the best of my knowledge and belief.

Yours faithfully,

Akshay A. Yerunkar