Vinod Selpol

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SUMMARY

I am an enthusiastic, inherently curious and highly motivated engineer with experience in Automation, maintenance and manufacturing. Skilled in PLC programming (Siemens, ABB, Allen Bradley), Catia, Abaqus, Matlab, Simulink and Microsoft Tools. Passionate about electromobility and sustainability. "A natural self-starter that works confidently and competently with minimum supervision". I was successfully able to implement continuous improvements on the shop floor and contribute meaningfully to management discussions. My global exposure, born in India, studied in Germany and Sweden has honed my interpersonal skills.

EDUCATION

M.Sc in Mechanical Engineering   *Sep 2018 - Nov 2020*
Technische Universität Dortmund, Germany & Högskolan Vast, Trollhättän, Sweden

Bachelors in Mechanical Engineering   *Aug 2014 - Aug 2018*
Acharya Institute of Technology, Bangalore, India
Achievements - Graduated with first class with distinction (honors), Nominated for the best outgoing student.

WORK EXPERIENCE

Automation Trainee - Northvolt   *Oct 2020 - Jun 2021*
- Design, implement and troubleshooting the PLC software systems in Siemens Simatic S7 1200 for delivering desired system functionality.
- Work closely with the Manufacturing Equipment Engineering team, and Maintenance teams to initiate, and plan for critical, routine, and preventative maintenance plans for existing and new equipment line commissioning.
- Analysis of electrical and mechanical assemblies to predict equipment failure modes and proactively set and establish reliability-centered maintenance. Performed the life cycle cost analysis of the equipment and sub-assemblies.

Battery & BMS Simulation Engineer Intern - Decibels Lab   *Jul 2020 - Sep 2020*
- Li-ion cell electrochemistry, Modeling of Li-ion cells and Battery management system.
- Perform battery pack performance, thermal, and life analysis under specific drive cycles and ambient conditions to provide guidance for battery pack sizing, performance compliance.
- Analyze cell test results and develop battery models for pack performance and life estimation.
- Develop and validate battery control algorithms (SOC, SOP, SOH).
- Predict and perform over & under (voltage, current, temperature) protection algorithms for the battery management system. Perform cell behavior state estimations wrt drive cycle current data.

Manufacturing Intern - Robert Bosch   *Apr 2018 - Aug 2018*
Bangalore, India
- Collaborated with engineers to resolve system malfunctions, implement operating protocols and provide necessary technical information to personnel.
- Responsible for periodic part data collection, analysis and management using Microsoft access.
- 20% reduction in quality issues by identifying the root cause and published statistics report failure in SPSS.
- Overhauled the overall equipment effectiveness (OEE) program which increased capacity by 15% and improved total productivity. Directed problem solving, work measurement, PFMEA, 5S, Kaizen and cost benefit projects in CAM.

Simulation Engineer Intern - Hindustan Aeronautics Limited   *Jan 2018 - Mar 2018*
Bangalore, India
- Assisted and coordinated with CAE, Manufacturing and quality department at all stages of design development process.
- Implemented lean manufacturing technique and designed a horizontal stabilizer using CATIA V5.
- conducted design reviews regarding product effectiveness quality, uptime, and safety. Monitoring and validation of performance parameters on daily basis.
- Performed finite element analysis, Strength and dynamic characteristics of the stabilizer are calculated using Ansys.

Mechanical Design Intern- Defense Research and Development Organization   *Jan 2017 - Feb 2017*
Bangalore, India
- Responsible for mechanical design, CAD model development with Catia and draft engineering drawings of turbine blades and dynamic structures and performed FEA/CFD analysis in design components and assemblies.
- Supported technology team lead and junior engineers in new product development activities.

Powertrain & Aerodynamics engineer- Acharya formula team   *Feb 2016 - June 2018*
Bangalore, India
- Responsible for the e-powertrain development for the university racing team.
- Calculation and measurement of the aerodynamic parameters using wind tunnel tests

PROJECTS AND WORKSHOPS

Tools Used: *Simens TIA Portal, Factory I/O, PS7, Autocad*
Design and automating the box wrapper using VFD drives
- Designing a control system for an automated box wrapper using PLC control system.

Develop and automating the dosing machine in factory I/O simulator
- Developing the control system simulator to automate the dosing machine with motors.

Automation of the Box sorting system using object detection sensors
- Developed the control system simulator to sort boxes of different sizes using ultrasonic sensor detection.
- Developing the GUI/ HMI to control the system manually.

TECHNICAL SKILLS

- Matlab, C++, Python – basic programming knowledge.
- Solid Edge, CATIA, Creo – CAD in design projects.
- Microsoft Office – in depth knowledge in word, PowerPoint, excel, outlook, Teams and VBA.
- Siemens NX, ABAQUS, Ansys- static and dynamic simulation analysis.
- Thermocalc, Jmat Pro- material property.
- GT-Suite, GT-Autolion, Scilab, Simulink - battery modeling and simulation through HPPC test.

VOLUNTEERING

Project Coordinator- TEDx Bochum, Germany   *Oct 2019 - May 2020*
- Responsible for event planning, outreach campaigns, helping build communities. Executed strategies to grow the community, built a positive team culture.

Digital Automation Challenge- Continental HQ, Germany   *Jan 2020*
- Developed a visual surface configurator to recognize car interior surfaces and visualize different materials using augmented reality.

Hackathon - Open Hack , Gothenburg, Sweden   *Feb 2019*
- worked in a group to solve corruption in Swedish government assistance projects by optimizing data visualization. And also Worked on Sustainability, Making cities smarter, Circular economy.

CERTIFICATIONS

Lean Six Sigma Green Belt - International Sigma Institute
- DMAIC process, process mapping, FMEA, risk assessment, hypothesis testing.

Diploma course in Electromobility - Swedish Electromobility Centre
- Energy storage, batteries-battery development, fuel cell modeling and simulation, electrical machines, power electronics, drivetrain optimization, electrochemistry.

LANGUAGES

English - Native or Bilingual Proficiency
German (B1) - Professional working Proficiency
Swedish - Elementary Proficiency