Jacqulin ████████

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Recent Master's graduate in Mechatronics and Cyber-Physical Systems with a Bachelor's in Electrical and Electronics Engineering. Experienced in software development, simulation, and product design, showcased through an automated semiconductor power loss simulation workflow. Seeking entry-level roles in software engineering to apply skills in Python, MATLAB/Simulink, and CAD tools to drive innovation and solve real-world challenges.

WORK EXPERIENCE

Master Thesis Student

Hilti EG | 09. 2023 - 03. 2024   Kaufering, Germany

- Implementing an automated workflow for semiconductor power loss simulation, combining expertise in MATLAB scripting and LTspice.
- Sensitivity analysis to discover the critical parameters that enhance the simulation speed without compromising accuracy.
- Engineered an efficient process that minimizes manual interventions and enhances productivity.

Working Student

Hilti EG | 07. 2022 - 08. 2023   Kaufering, Germany

- Electronics predevelopment by enhancing the simulation capabilities for power electronics
- Performing simulations for different circuits to validate design and functionality using MATLAB, LTspice and PLECS.
- Conducting tests on alternate electronic components for tools to ensure compatibility and performance using Hilti ODA, EDA and ECTR software.
- Documentation and analysis using SiliconExpert to optimize electronic component selection and management.

Internship

AutoCAD and SolidWorks at CADD Centre, Pala   Kerala, India
07. 2019 - 09. 2019

- Adding constraints to sketches, hatching drawings
- Assembly modeling, sheet metal design, model visualization
- Drawing views and annotations, surface modelling

Internship

Kerala Electrical & Allied Engineering Co. Ltd   Kerala, India
06. 2016 - 08. 2016

- Implant training in various sections of transformers
- Winding, core building, tanking and testing of transformers
- Core coil assembly and terminal gear fixing

SKILLS

- MATLAB, Simulink, LTspice, PLECS, AutoCAD, SolidWorks
- C, Python, Embedded C
- LaTeX, Microsoft - Word, Excel and PowerPoint
- Jira, Agile
- Sensitivity Analysis, Process automation using compatible scripting languages

LANGUAGES

- English: Fluent
- German: Basic
- Malayalam: Native

EDUCATION

M.Eng. in Mechatronic and Cyber-Physical Systems

Deggendorf Institute of Technology   Bavaria, Germany
03. 2020 - 03. 2024

Major Courses: Advanced Robotics & Autonomous Systems, Advanced Modeling and Simulation, Mechatronic System Simulation, HMI, Functional Safety, AM production Processes and Technologies, Tele experiments with Mobile Robots

B.Tech. in Electrical and Electronics Engineering

APJ Abdul Kalam Technological University   Kerala, India
08. 2015 - 06. 2019

Major Courses: Embedded Systems, Power Systems, Signal Processing, Network Analysis, Power Electronics, Control Systems, Microelectronics, Renewable Energy Systems.

CASE STUDIES

- **Mechatronic system simulation**s - Parameter Identi-fication behavior of a drive train consisting of a PC machine and a rotating mass. Design of speed control of a DC machine
- **Cyber-Physical Production System Using AM** - Automated post-processing of powder-based AM
- **VR/AR in System Engineering** - Virtual Operating Room
- **Cooperative and Autonomous Systems** - Legal Requirements of Autonomous Systems

PROJECTS

Master's - Technologies and Additive Manufacturing Production Process

- Comparison of machines, materials, and methods of Laminated object Manufacturing (LOM), Fused deposition Modeling (FDM), Selective Laser Sintering (SLS), Stereolithography (SLA)

Design and Simulation of a Cascaded H-Bridge Inverter (Bachelor Thesis)

- Uses Integrated Circuits & Semiconductors with a frequency of 50Hz for 220V across the winding of a transformer

Temperature Sensing Fan (Bachelor Design Project)

- Control the speed of fan by sensing the room temperature, using Arduino UNO Microcontroller based on ATmega328D.

Micro Geared Ultrasonic Motor (Bachelor Seminar Paper)

- Analysis of dynamic characteristics of micro-geared ultrasonic motor with a mathematical model.