Sachin Johny

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Ilmenau, Germany

SUMMARY

A motivated and proactive student with a strong interest in MEMS and neural networks, looking to gain hands-on experience in the field of sensors. Skilled in sensor simulation and analysis. Proficient in programming languages such as MATLAB and Python.

EXPERIENCE

Master Thesis - Spoken Digit Classification using Bioinspired Acoustic Sensors
02/2024 - Present

Technische Universität Ilmenau

- Designed and implemented an experimental setup featuring an array of bioinspired acoustic sensors.
- Constructed electronic circuits to interface with the sensor array, enabling signal capture and processing.
- Programmed an FPGA to establish a feedback system for real-time signal processing.
- Characterize the sensor array to determine key parameters (frequency, bifurcation, calibration factor).
- Utilize MATLAB for data acquisition, analysis, and interpretation to evaluate the effectiveness of the classification system.

Student Assistant
08/2022 - Present

Technische Universität Ilmenau

- Simulated signal pre-processing using bio-inspired acoustic sensors (in Matlab).
- Evaluated sensor simulations using reservoir computing based on memristive devices (in Matlab).
- Optimized the sensor performance by tuning the model parameters.
- Compared sensor simulations with established signal pre-processing techniques (in Matlab).
- Analyzed data clustering using PCA and t-SNE (in Python).

Work Student
05/2023 - 10/2023

audifon GmbH & Co. KG

- Conducted comprehensive data collection, cleaning, labelling, and analysis of audio datasets using Python and MATLAB.
- Implemented and optimized machine learning models, employing filtering methods to enhance prediction accuracy.
- Gained experience in C programming and embedded systems concepts, including code execution in Segger embedded studio and implementing an ML classifier and signal processing calculations.

Student Assistant
02/2023 - 04/2023

Fraunhofer IIS

- Conducted an in-depth literature survey on DAC and MUX technology and presented research findings to colleagues.
- Actively engaged in a hands-on workshop on designing a 'useless machine' using Cadence Virtuoso.
- Created detailed documentation summarizing workshop content and incorporating valuable insights from fellow participants.

EDUCATION

Micro- and Nanotechnologies
10/2020 - Present

Technische Universität Ilmenau - Master's degree

Coursework: MEMS, Sensor technology, Neuromorphic Engineering, Electronics Technology, Semiconductor devices, Microelectronics, Microsystems Technology, Microsensors and Microactuators

Mechanical Engineering 08/2015 - 05/2019
Rajagiri School of Engineering and Technology, India

CERTIFICATES

Introduction to FPGA Design for Embedded Systems ↗ 11/2022 - Present
Coursera

Autodesk Fusion 360 Certified User ↗ 01/2018 - Present
Autodesk

SKILLS

- Vivado
- Data analysis and interpretation
- Soldering
- Machine Learning
- Fusion 360
- Kicad
- Python
- Matlab
- FPGA programming
- Team player

LANGUAGES

English Fluent
German Basic