Vijay Mohanram Iyer

iyervijay99@gmail.com +49-17667345305 iyervijay21.github.io/Vijay_Portfolio
linkedin.com/in/iyer-vijay

SUMMARY

Passionate engineer specializing in intelligent safety systems and health applications powered by computer vision and machine learning. Skilled in transforming advanced algorithms including deep learning architectures and large language models into practical, user-centered tools that enhance security and promote human well-being.

PROFESSIONAL EXPERIENCE

1. FZI *August 2025 – November 2025*
Research Assistant

- The objective is to enhance the DeepFake detection framework (Master Thesis) by incorporating dynamic region-of-interest tracking to facilitate real-time deployment by using 3d geometric facemesh.
- Furthermore, to also develop an interactive user interface that visualizes multiple ROIs, emphasizing regions with elevated artifact energy concentrations.
- To fine-tune and cross-validate across different DeepFake solutions to ensure robustness and generalizability and work towards research publication.

2. TecoLab *March 2023 – September 2025*
Working Student

- Worked on ML4Print project to analyze and classify printed documents based on printer-specific characteristics and paper substrate type to identify fake documents.
- Worked on a heat simulation project, utilizing machine learning to simulate the thermal behavior of liquids within industrial valves, enhancing predictive maintenance capabilities.
- Sensor optimization for open-earables with edgeML.
- Built and optimized websites using Jekyll and WordPress, focusing on performance improvements and SEO optimization.

3. Access@KIT *March 2023 – May 2023*
Working Student

- Designed and trained a custom bi-directional RNN for text-to-speech conversion for acoustic modeling and to understand the contextual relationship, enhancing improved digital content accessibility for visually impaired users on the web application.

4. Accenture India Pvt. Ltd. *February 2022 – April 2022*
Associate Software Engineer

- Contributed to server maintenance of IBM Mainframe, ensuring system reliability and stability for critical business operations.

5. Accur Digitus *January 2020 – May 2020*
Web Developer Intern

- Developed responsive and scalable web applications using React.js, improving the user interface and enhancing user experience.
- Worked closely with the back-end team to implement RESTful APIs, ensuring seamless data integration and communication between front-end and back-end systems.

EDUCATION

M.Sc. in Electrical Engineering and Information Technology *May 2022 – July 2025*
Karlsruhe Institute of Technology
GPA: 2.3

Bachelor of Engineering in Electronics Engineering *August 2017 – May 2021*
University of Mumbai, India
GPA: 2.8

PROJECTS

1. **Attention Mechanism and Multi-ROI Artifact Recognition for DeepFake Detection Using rPPG (FZI)** *February 2025 – July 2025*
   This Master Thesis aimed to design an end to end pipeline to evaluate the artifacts using rPPG signals. Designed a Fusion Model, concatenating the features from Vision Transformer and CNN for local and long-range dependencies with a custom Fusion-Head for DeepFake classification. Benchmark results under different environmental conditions.
2. **CamCussion: Eye Tracking Software (Zeiss Innovation Hub)** *December 2023 – July 2024*
   Utilized computer-vision to analyze pupil dilation and saccadic eye movements in real time to track and assess eye behavior, contributing to accurate concussion diagnosis.
3. **Self-Driving Car using LIDAR** *September 2021 – February 2022*
   Developed a solar-powered autonomous vehicle prototype using 360° LIDAR for reliable obstacle detection and safe navigation. Implemented on Arduino with custom chassis and differential drive, aimed at enhancing safety in urban mobility applications.
4. **Real-Time Car Accident Alert System** *January 2021 – june 2021*
   Developed an embedded vehicle accident warning system to automatically detect crashes, send precise location data, and alert emergency services, family, and friends to improve response times.

TECHNICAL SKILLS

- **Programming Languages:** Python, C++, JavaScript, SQL, React.js, Node.js, HTML, CSS
- **Libraries/Frameworks:** OpenCV, Qt, TensorFlow, PyTorch, pandas, NumPy, Matplotlib, scikit-learn
- **Tools:** Git, Docker, MATLAB, Linux, Latex
- **Spoken Languages:** English C1, German A2 (Learning)

SOFT SKILLS

- **Technical Leadership:** Project Development, Cross-functional Collaboration, Innovative mindset.
- **Problem Solving:** Critical Thinking, Performance Optimization, Debugging, Balancing and Prioritizing tasks to meet goals.
- **Communication:** Active Listening, Documenting, Knowledge Transfer.