

HITESH KOTTE DATA SCIENTIST & ML ENGINEER

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Technical Skills

Languages: Python

Machine Learning & AI: TensorFlow, PyTorch, YOLOv7, Scikit-Learn, OpenCV

DevOps & Cloud: Docker, Kubernetes, Kafka

Tools & Frameworks: Git, Jupyter Notebooks, LaTeX

Experience

Deutsches Forschungszentrum für Künstliche Intelligenz (DFKI GmbH)

January 2023 – Present

Junior Research Engineer

(Remote) Berlin, Germany

- Developed a real-time object detection system using YOLOv7, which achieved 97% accuracy in analyzing human posture during gym exercises, significantly improving posture correction and reducing injuries through real-time feedback.
- Implemented the system using Python, TensorFlow, and PyTorch, deployed on Kubernetes with Kafka for real-time processing, and automated deployments with CI/CD pipelines, benefiting intermediate level participants by enhancing their training experience.

CTC Advanced GmbH

July 2022 – December 2022

Testing Manager

Saarbrücken, Germany

- Specialized in implementing and validating smart card systems by adhering to ISO/IEC 7816 and ISO/IEC 14443 standards, ensuring compliance and enhancing product reliability.
- Conducted risk assessments and utilized cryptographic algorithms like AES, DES, and RSA, alongside automated testing tools, to identify vulnerabilities and improve the overall security and performance of smart card systems.

Cispa Helmholtz Center for Information Security (CISPA)

January 2021 – June 2022

Research Assistant

Saarbrücken, Germany

- Conducted research on multi-sensor fusion to enhance the security of autonomous vehicles, integrating 5G, IMU, and GPS sensors to detect and mitigate real-time attacks through anomaly detection.
- Developed and tested GPS spoofing attacks, using data from 5G, IMU, and Google Maps API, validated through LGSVL Simulator, to ensure the effectiveness of the fusion approach in maintaining secure autonomous driving.

Projects

LLM Chatbot for Universität Leipzig | Python, NLP, LLM Cloud Console

July 2024

- Developed a Large Language Model (LLM) chatbot to assist Leipzig University students with accessing course materials and managing exam registrations. This project aimed to enhance student self-directed learning and streamline administrative processes. Implemented using advanced NLP techniques and integrated with the university's systems, achieving 84.78% accuracy in delivering contextually accurate responses.

Augmented Intelligence in Tutoring Systems / Master Thesis | YOLOv7, Kubernetes

November 2020

- Engineered a scalable real-time human pose tracking system leveraging YOLOv7 for fitness training, aimed at enhancing self-directed learning through immediate posture correction and feedback. Integrated advanced computer vision techniques and deep learning models, optimizing for deployment in user-centric health applications, with a focus on model accuracy, latency reduction, and seamless integration with AI-driven feedback systems.

Multi Sensor Fusion for Autonomous Vehicles | LGSVL, Google Maps API

November 2020

- Developed a sensor fusion system for autonomous vehicles, integrating 5G, IMU, and GPS sensors to enhance real-time attack detection and ensure safe driving; engineered and tested GPS spoofing attacks, validated using Google Maps API, and LGSVL Simulator to simulate and counteract real-world threats.

Publications

FitSight: Tracking and Feedback Engine for Personalized Fitness Training, UMAP '24, Cagliari, Italy 01/05/2024

IMPECT-POSE: A Complete Front-end and Back-end Architecture for Pose Tracking and Feedback, UMAP '24, Cagliari, Italy 01/05/2024

Real-Time Posture Correction in Gym Exercises: A Computer Vision-Based Approach, MILES 2023, EC-TEL 2023, Aveiro, Portugal 08/09/2023

Augmented Intelligence in Tutoring Systems: A Case Study in Real-Time Pose Tracking, Springer ECTEL-2023, Aveiro, Portugal 28/08/2023

Education

Saarland University

Oct. 2020 – Oct. 2024

Master of Science in Data Science and Artificial Intelligence (DSAI)

Saarbrücken, Germany

CMR University

June. 2016 – June. 2020

Bachelor of Science in Computer Science (CSE)

Bengaluru, India