Hitesh Kotte *Data Science and Machine Learning Engineer*

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Profile

Data Science Engineer with a background in Computer Science and a Master's in Data Science and Artificial Intelligence from Saarland University, Germany. Skilled in Computer Vision and AI, particularly using YOLO. Committed to developing practical, user-focused AI solutions that enhance real-world applications. Eager to contribute innovative ideas in the field of AI and technology.

Professional Experience

01/2023 – present
Berlin, Germany

Research Assistant,
Deutsches Forschungszentrum für Künstliche Intelligenz (DFKI)
Lead Engineer, Real-Time Gym Activity Recognition Project

- **Project Leadership**: Led a project on real-time gym activity recognition using YOLOv7, managing the end-to-end process of webcam frame transmission, server processing, and analysis.
- **Deployment**: Deployed the application on Kubernetes, ensuring scalability and efficient resource management. Utilized Kafka for high-throughput real-time data processing.
- **Research and Publications**: Published multiple papers at esteemed conferences (see Publications), showcasing innovative approaches and findings. Developed and maintained a comprehensive GitHub repository and demonstrated a live application.

Skills:
- **Machine Learning & AI**: Proficient in YOLOv7, TensorFlow, PyTorch
- **Python Programming**: Extensive experience in Python for data analysis, machine learning, and back-end development
- **Front-End Development**: Skilled in HTML, CSS, JavaScript
- **Kubernetes and Kafka**: Proficient in deployment and real-time data processing
- **Advanced Git and CI/CD Pipelines**: Expertise in version control and CI/CD pipelines
- **GitHub Actions**: Implemented automated build and deployment processes
- **Data Analysis and Visualization**: Competent with Pandas, NumPy, Matplotlib

GitHub Repository: https://github.com/hiteshkotte/DFKI-fitsight ⧉

Contact for this Project:
- Milos Kravcik - Milos.Kravcik@dfki.de

06/2022 – 12/2022
Saarbrucken, Germany

Testing Manager,
CTC Advanced Gmbh
Achievements/Tasks:
- Smart Card Technologies.
- Performed testing with Visa and Mastercards for "Tap for Pay" feature.
- **Smart Card Standards**: Proficient in ISO/IEC 7816 and ISO/IEC 14443 standards for smart cards.
- **Security Protocols**: Experienced with cryptographic algorithms and protocols, such as AES, DES, and RSA.
- **Automated Testing Tools**: Skilled in using automated testing tools and frameworks for smart card validation.
- **Risk Assessment**: Conducted risk assessments to identify vulnerabilities in smart card systems.
- **Data Analysis**: Analyzed test data to identify trends & improve product performance.

| 01/2022 – 06/2022 | **Research Assistant,** |
| Saarbrücken, Germany | **Cispa Helmholtz Center for Information Security (CISPA)** |

Achievements/Tasks:
- Research on Multi-sensor Fusion for Autonomous Vehicles.
- Security for Autonomous Driving Vehicles

Contact : Mridula Singh - Singh@cispa.de

| 01/2020 – 04/2020 | **Graduate Engineer Trainee,** |
| | Xcelerator - Learn By Doing |

Achievements/Tasks:
- Implement ML ideas for suggestion engine on the webpage.
- Responsible for maintaing the suggestion engine webpage.

Education

| 10/2022 – present | **Saarland University** |
| Saarbrücken, Germany | *Master of Science* (M.Sc) |

Specialization: Data Science and Artificial Intelligence
- Topics in Algorithmic Data Analysis
- Image Processing and Computer Vision
- High Level Computer Vision
- Neural Networks: Theory and Implementation
- Artificial Intelligence
- Architectural Thinking for Intelligent Systems
- Human Computer Interaction

| 06/2016 – 06/2020 | **CMR University** |
| Bengaluru, India | *Bachelor of Science* (B. Sc) |

Specialization: Computer Science Engineering (CSE)
- Security
- Linux and Shell Programming
- Machine Learning
- Data Structures
- Deep Learning
- Software Engineering
- Artificial Intelligence

Skills

Docker and Kubernetes		CI/CD & Version control : Git
Data Visualization		Natural Language Processing (NLP)
Data Science		Artificial Intelligence
SQL		Computer Vision
Python Programming	● ● ● ● ○	R Programming	● ● ● ● ○
C	● ● ● ○ ○	C++	● ● ● ○ ○

Languages

English	**German**	**Telugu**
IELTS: 8.0	Saarland University (German Couse): 1.3 GPA	Native Language

Awards

| 30/01/2020 | **Certificate of Excellence** |
| | *Xcelerator* |

- Awarded certificate of excellence for the Face Recognition project.

Projects

01/2023 – present	**Augmented Intelligence in Tutoring Systems** *A Case Study in Real-time Pose Tracking to Enhance the Self-Learning of Fitness Exercises.* • Performed research on self learning methods for fitness exercises. • Implemented a YOLO model to detect the pose estimation. • Published a paper to ECTEL and UMAP.
07/2022 – present	**Multi Sensor Fusion for Autonomous Vehicles** *Trying to implement a fusion approach to fuse sensors for an autonomous vehicles for safe and secure drive.* • Performed research on Security domain and Machine Learning domain. • Collect real world data using Google maps API and also collected simulator data using LGSVL Simulator.
07/2019 – 05/2020	**Face Recognition (07/2019 - 05/2020)** • Performed research on Face recognition models. • Implemented the model from the learnings of Andrew NG.

Publications

28/08/2023	**Augmented Intelligence in Tutoring Systems: A Case Study in Real-Time Pose Tracking to Enhance the Self-learning of Fitness Exercises** ⍌ *Springer ECTEL-2023*
08/09/2023	**Real-Time Posture Correction in Gym Exercises: A Computer Vision-Based Approach for Performance Analysis, Error Classification, and Feedback** *MILeS 2023 - the Third International Workshop on Multimodal Immersive Learning Systems, part of the Eighteenth European Conference on Technology Enhanced Learning (EC-TEL 2023)*
01/05/2024	**FitSight: Tracking and Feedback Engine for Personalized Fitness Training** *In Proceedings of the 32nd ACM Conference on User Modeling, Adaptation and Personalization (UMAP '24), July 1–4, 2024, Cagliari, Italy.*
01/05/2024	**IMPECT-POSE: A Complete Front-end and Back-end Architecture for Pose Tracking and Feedback** *In Proceedings of the 32nd ACM Conference on User Modeling, Adaptation and Personalization (UMAP '24), July 1–4, 2024, Cagliari, Italy.*