

Vippin Kumar Jeetmal

MSc.Computer Science | Kaiserslautern, Germany, 67663 |

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OBJECTIVE

Computer Vision and Cloud Computing Engineer with 5+ years of experience in developing scalable cloud solutions **Docker, Kubernetes, OpenShift** and **3D reconstruction**. Passionate about integrating **AI-driven** applications with cloud infrastructure. Seeking full-time opportunities in **Computer Vision, AI Research, or Software Development**

TECHNICAL SKILLS

Programming Languages: Python, Java, NodeJS, Angular, C, Go

Database: SQL, MongoDB, Redis

Cloud and DevOps: Docker, Kubernetes, OpenShift, Git, GitLab CI/CD, Jenkins, Rancher, Helm

Frameworks and APIs: Spring Boot, gRPC, MQTT, REST, Camunda BPM Modeler, OPCUA

Developer Tools: Git, VS Code, Jenkins

AI and Machine Learning: Deep Learning, PyTorch, TensorFlow, OpenCV, 3D Gaussian Splatting, NeRF

Data Analysis and Visualization: Pandas, NumPy, Matplotlib, Plotly, ElasticSearch

EDUCATION

Rheinland-Pfälzische Technische Universität Kaiserslautern

M.Sc Computer Science (Intelligent Systems & Software Engineering)

Kaiserslautern, Germany

Apr. 2022 – May. 2025

Nitte Meenakshi Institute of Technology

Bachelor of Engineering in Computer Science

Bengaluru, India

Aug. 2014 – May 2018

EXPERIENCE

Student Research Assistant

Technologie-Initiative Smartfactory KL

June 2023 – Present

Kaiserslautern, Germany

- Deployed **OpenShift** on the in-house server to optimize the configuration of **Kubernetes** and **Docker**, automating deployment processes and facilitating seamless, scalable application deployment for development teams
- Integrated **Eclipse BaSyx** to host **Asset Administration Shells (AAS)**, enabling the development of digital twin solutions for advanced asset management, real-time monitoring, and optimizing production processes
- Implemented **Tekton pipelines** with Openshift for **continuous integration and deployment (CI/CD)**, ensuring efficient development workflows, reducing deployment time and enhancing code quality

Student Research Assistant

Deutsches Forschungszentrum für Künstliche Intelligenz GmbH (DFKI)

Feb 2024 – Present

Kaiserslautern, Germany

- Deployed an in-house **Industry 4.0** solution by setting up the **BaSys** environment on the **OpenShift** platform enabling real-world industrial applications
- Installed **Raspberry Pi OS** with the **OctoPrint** module to enable seamless interaction with a **3D printer** and integrated OPC UA to automate print job execution
- Developed a **Spring Boot** application to interact with a **3D printer** and **Production plant** via OPC UA, integrating it with **Camunda BPMN** for process orchestration
- Designed a **BPMN** orchestration pipeline to automate the entire manufacturing process from 3D printer to production plant

Student Research Assistant

Deutsches Forschungszentrum für Künstliche Intelligenz GmbH (DFKI)

May 2023 – Dec 2023

Kaiserslautern, Germany

- Leveraged **Elasticsearch** to process and analyze **Floating Car Data** based on distance, time of day, and day as part of the **Smart city** project
- Preprocessed data** by handling missing values, filtering noise, and removing outliers, then developed trip insights to identify commute patterns and peak travel times
- Created interactive visualizations using **Plotly** to effectively analyze and interpret processed data, enabling better insights into commute trends and urban mobility

Software Developer

Jul 2018 – Feb 2022

Siemens Technology and Services Private Limited

Bengaluru, India

- Worked on **Simatic Edge** project, an edge computing platform for preprocessing industrial data before cloud-based **ML/AI** analysis
- Developed a web application using **Angular** to configure field-level endpoints in industrial automation systems
- Built a REST API server using **NodeJS**, following **OpenAPI** specifications with **Swagger** documentation
- Implemented an RPC system using **gRPC** and **Go** for efficient communication between Docker containers
- Contributed to **DevOps** pipelines using **GitLab CI/CD**, **Jenkins**, and leveraged **Helm charts** for version control of applications
- Designed and implemented a backup and restore system for **Kubernetes** nodes, ensuring **data reliability** and preventing loss during system upgrades

Software Engineer

May 2017 – Jul 2017

Ensatus Technology India

Bengaluru, India

- Developed a **location-based social media** application, enabling users to share favourite locations, interact socially, and manage daily tasks
- Implemented database management using **PHP** and **MySQL**, optimizing data storage and retrieval ensuring smooth application performance

PROJECTS

Multi-View Face and Gesture Animation With Dynamic Gaussians

PyTorch, Gaussian Avatars, OpenCV, 3D Reconstruction, Pytorch3D

Nov 2024 - Present

- Designed and Developed a **multi-view MoCap** system for capturing facial expressions and hand gestures, enabling realistic upper-body animation for **AI-driven avatars**
- Developed a data preprocessing pipeline to process the captured dataset, ensuring readiness for Gaussian Avatar creation. The pipeline included **camera calibration, keypoint detection, body segmentation, background matting, and SMPLX-based body model fitting**
- Curated a diverse dataset of multiple users performing various facial expressions and hand gestures that can be used for various applications
- Adapted the **Gaussian Avatars** model to support **upper-body motion synthesis**, ensuring realistic replication of facial expressions and hand gestures

Neural Radiance Fields for Novel View Synthesis | *NeRF, MipNeRF, Instant-NGP*

Nov 2023 - March 2024

- Created a custom dataset to evaluate the effectiveness in generating novel views and reconstructing 3D scenes of **NeRF, Mip-NeRF, and Instant-NGP**
- Performed qualitative and quantitative analysis and utilized **TensorBoard** to track **PSNR, SSIM, and LPIPS** metrics, providing insights into model performance and optimization trends

Smart shopping cart (IOT) | *Android, Arduino IDE, Firebase, Python*

Jan 2018 - May 2018

- Developed a smart shopping cart system using **RFID** and load sensors, enabling a cashless and secure shopping experience through **IoT** integration
- Programmed the **Arduino Uno** using **Python** to integrate sensors and built an **Android application** to enhance system functionality
- Utilized **Firebase** for real-time data management, enabling seamless synchronization between the smart shopping cart system and the Android application

LANGUAGE SKILLS

English: Fluent (C1)

German: Conversational (A2)

Hindi, Marwadi, Kannada: Native

ACHIEVEMENTS & VOLUNTEERING

- Participated in **Capture the Flags Cloud Hackathon** by **Fraunhofer IESE**, Dec 2024
- Winners of the use-case **CO2 emission optimization for Grain Fields** at the Smart Farming Hackathon by **Innovationsagentur Rheinland-Pfalz** and **Fraunhofer IESE Kaiserslautern**, Dec 2024
- Won the **HackARthon**, a 24-hr AR hackathon conducted by **e4Lab Kaiserslautern**, Feb 2023
- Volunteered at the job fair **Treffpunkt Kaiserslautern**, June 2023 and June 2024
- Mobile application development workshop, Bengaluru 2017