

# VEDAANT JOSHI

Kaiserslautern, Germany

☎ +49 17674960952

✉ [vedaantjoshi912@gmail.com](mailto:vedaantjoshi912@gmail.com)

🌐 [LinkedIn](#)

🐙 [GitHub](#)

[Portfolio](#)

## Professional Experience

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### Deutsches Forschungszentrum für Künstliche Intelligenz

05/23 – 02/25

*Student Assistant, Kaiserslautern, Germany*

- Collaborated with cross-functional teams to standardize annotation protocols for RGB-D data, directly contributing to machine learning applications.
- Validated over 250+ annotated images, ensuring high-quality datasets for training ML models.
- Presented findings and documented annotation quality, ensuring data accuracy and clear communication.

### Vision Impulse GmbH

04/23 – 07/23

*Machine Learning Engineer, Student Job, Kaiserslautern, Germany*

- Optimized LSTM network architecture and conducted experiments for time-series satellite data, improving model performance.
- Proficiently analyzed time series satellite data, showcasing my skills in understanding complex data for model enhancement.

### Rheinland Pfalz Technical University

10/21 – 10/22

*Research Assistant - Deep Learning & NLP, Kaiserslautern, Germany*

- Designed neural network architectures for predicting activity coefficients, leveraging PINNs to predict interactions between two chemical compounds.
- Preprocessed, cleaned and analyzed and created 10 different train-test split datasets on the basis of SMILE-based molecular combinations with each dataset having 166,000 data points using Pandas and NumPy and performed exploratory data analysis.
- Led this project in collaboration with researcher at ML Lab, RPTU and further implemented Bayesian optimization for hyper-parameter tuning, resulting in a 1% increase in model accuracy.

### Meditab Inc.

12/18 – 06/19

*Internship Trainee, Ahmedabad, India*

- Worked as part of the team to develop a client-side application related to Electronic Health Records (EHRs), contributing to the digital version of the Patient Chart.
- Utilized Power Builder for the front-end and Sybase for the back-end of the application.
- Worked on multiple software modules, including Patient Master, Search Screen, Authorization Tracking, Patient Insurance, and Instruction Master.

## Projects & Research

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### LinkedIn Post Generator | [Project](#)

01/25

- Extracting key topics, language nuances, and preferred post lengths from historical data to generate tailored LinkedIn posts.
- Implemented a robust workflow to collect, preprocess, and analyze LinkedIn posts, ensuring accurate topic extraction and content generation.

### Reinforcement Learning Based Pretraining | [Thesis](#)

07/23 – 01/24

- Developed AI-based decision-making models for autonomous navigation, implementing Soft Actor-Critic (SAC) reinforcement learning in CARLA for improved safety and control. Used various sensors including RGB camera, collision detector, and lane Invasion detector
- Designed vehicle simulation pipeline in CARLA, generating 10000+ images and reducing manual annotation time by 90%.
- Improved accuracy of Faster-RCNN model for downstream pedestrian detection task by 1%

### CAD Sequence Prediction | [Master Project](#)

04/22 - 10/22

- Processed 255 3D CAD images to ensure high-quality inputs for model training.
- Built an Encoder-Decoder model combining Transformers, LSTMs, and 3D-CNNs to predict CAD modeling sequences.
- Applied BLEU scores to assess model performance on 3D CAD sequence predictions.

## Education

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### Rheinland Pfalz Technical University

*MSc. in Computer Science (Machine Learning Specialization), Grade: 1.6*

*Kaiserslautern, Germany*

### Charotar University of Science and Technology

*BTech. in Computer Science, Grade: 1.2*

*Changa, India*

## Skills

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**Programming Languages:** Python, SQL, C++, R, Java, JavaScript, C#, .NET

**Development & DevOps:** Git, Linux, Docker, AWS, Weights & Biases, Kubernetes

**Machine Learning & AI:** PyTorch, Tensorflow, Scikit-Learn, Stable-baselines3, Hugging Face, OpenCV, SmilesPE

**Data Science & Analytics:** Pandas, NumPy, PySpark, Matplotlib, Streamlit, FastAPI

**Coursework:** Machine Learning I, Machine Learning II, 2D Image Processing, 3D Computer Vision, Very Deep learning, Software Engineering, Applications of Machine Learning and Data Science, NN for Natural Language Processing, Data Visualization

**Languages:** English, German B1, Hindi, Gujarati

## Certifications

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- [Mathematics for Machine Learning](#)
- [Data Science Math Skills](#)
- [Programming, Data Structures, and Algorithms](#)
- [Python for Data Science and Machine Learning](#)
- [Neural Networks and Deep Learning](#)
- [Advanced Computer Vision with Tensorflow](#)
- [Introduction to Docker](#)
- [Generative AI with Large Language Models](#)

## Extracurricular & Leadership

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- Holder of a Bachelor's degree in Music, specializing in Tabla, and an active performer with a Germany-based Indian band since 2023 ([Instagram](#)).
- Organized the NASA Space Apps Hackathon 2021 ([Newsletter](#)), bringing together teams for innovation in technology and space exploration.

