



# Prakash Naikade

MSc - Media Computer Science, Saarland University  
Saarbrücken, Germany

## Machine Learning Research Engineer

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### Summary

I am passionate about *Machine Learning*, especially *Computer Vision & Generative AI*. I have hands-on experience from academia and industry. My research interests span in the broad areas of 3D-Reconstruction, Neural Rendering, Radiance Field, Motion Capture, Digital Twins, AR/VR, Generative Models, LLMs, and generally Computer Vision, Computer Graphics, Deep/Machine Learning, HCI, & Data Science, to solve the real-world problems with impactful AI aided solutions.

### Key Skills

- CNNs, Transformers, GANs, ML Algorithms
- Model Development & Optimization
- Transfer Learning
- 3D Vision, GenAI
- UX/UI
- HCI, AR/VR

### Technical Skills

- Programming:** Python, C#, C++, R, MATLAB, C, SQL
  - Packages:** PyTorch, TensorFlow, OpenCV, Open3D, NumPy, Pandas, SKLearn, HuggingFace, LangChain, Matplotlib
  - Tools:** Git, Unity 3D, Blender, COLMAP, Metashape, Meshlab, SLURM, Docker
  - OS:** Windows, Linux, Shell/DOS Scripting
- Python ●●●●○  
C#, C++ ●●●○○  
PyTorch ●●●●○  
TensorFlow ●●●○○

### Certifications

- Kaggle:** Python, ML, Pandas, Feature Engineering, Data Visualization, Data Cleaning, SQL, Reinforcement Learning & Game AI, Time Series
- Udacity:** C++, AWS ML Foundations
- Coursera:** Structuring ML Project, Neural Network and Deep Learning, Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization
- DataCamp:** Intermediate R, Data in R
- Memgraph:** Graph Analytics

### Languages

- Business Proficiency:** English, Hindi
- Elementary:** German • **Native:** Marathi

### Hobbies

Biking, Running, Hiking, Movies, Music

## Education

### M.Sc. in Media Informatics

Saarland University

Oct '20 – Aug '24  
Saarbrücken, Germany

- Grade:** 1.6/1.0
- Courses:** Computer Graphics, Image Processing & Computer Vision, Neural Networks: Theory & Implementation, High-Level Computer Vision, Statistics with R, Adversarial Reinforcement Learning, Human Computer Interaction, Games & Interactive Media
- Thesis:** Novel View Synthesis of Structural Color Objects Created by Laser Markings. (1.3)

### Bachelor of Engineering in Computer Engineering

Savitribai Phule Pune University

Jun '11 - May '15  
Pune, India

- Grade:** 65% (First Class)

## Projects

- LLMs** - Training LLMs to understand finetuning, data preparation & evaluation.
- Diffusion Models** - Implementing diffusion model to understand diffusion process.
- Human Action Recognition (HAR)** - Investigating the performance of different deep learning models and their ensembles used for HAR in still images.
- COVID-19 Detection** - TensorFlow implementation of model based on ResNet50 architecture for COVID-19 detection on CXRs using dataset sourced from Kaggle.
- Image Segmentation on PASCAL VOC and Cityscapes Datasets** - Understand how CNNs like UNet, RU-Net and R2U-Net are utilized for Image Segmentation.
- Object Detection** - Training an object detection model on custom dataset (Oxford Pets dataset) using TensorFlow Object Detection API 2.
- Easy Flappy Bird** - Implementing Flappy Bird game using Unity & C#.
- Roman Villa Nennig Bot: Your virtual guide to Roman Villa Nennig** - Chatbot helps user throughout their journey of visiting a museum of Roman Villa Nennig.
- Ludwig Palette: an AR painting game** - App created in Unity & C# allows visitors of Ludwigskirche to explore and enjoy its architecture by painting on its surfaces.
- Synthetic Dataset** - Creating simple 3D rendered datasets in Blender and Unity.
- Mini-RayTracer** - Developing simple ray tracing engine in C++.
- Bachelor Thesis: Secure Data Storage on Multi-cloud Using DNA Based Cryptography** - Project enables new perspective on DNA based cryptography.

## Work Experience

- Junior Researcher (HiWi)** Part-time Sept '23 – Dec '24  
August-Wilhelm Scheer Institute Saarbrücken, Germany

Contributed to the MediHopps, iperMö, FläKI & VuLCAn projects, working on human pose estimation, human action recognition, literature research & reviews, project proposals; generally, computer vision, graphics, machine/deep learning, & XR tasks.

- Research Assistant** Full-time July '23 – Aug '24  
Max Planck Institute for Informatics - AIDAM Group Saarbrücken, Germany

Worked on Radiance Field methods for Novel View Synthesis of structural color objects created by laser markings, facilitating interactive visualization of view-dependent structural colors of laser-printed images & paintings on metal substrates.

- Computer Vision Intern** Full-time March '23 - May '23  
BASF-Coatings GmbH Münster, Germany

Worked on development of dataset and algorithms for adhesive tests' detection & corrosion detection on images of test panels of metal substrates using YOLOv8 & UNet for automation project.

- Computer Vision Intern** Full-time May '22 - Sept '22  
Fenris GmbH Aachen, Germany

Contributed to Motion2Coach project, developing marker-less motion capture solutions using single & multiple cameras, for athlete motion tracking and analysis.

Tasks included literature survey, camera calibration, deep learning based human pose estimation & golf sequence detection, estimating joint angles from 3D body poses, comparing two pose sequences and visualization of results in Blender & Unity.

- Indian Civil Services Exam Preparation** Full-time Jun '15 - Jul '19

During the preparation of this exam, I gained Under-Graduate level knowledge of Anthropology, Polity, Governance, Indian Constitution, Social Justice, International Relations, Economics, Indian & World Geography, Indian & World History, Indian Culture and Society, Environment, Ethics, etc. (Pass percentage of candidates ≈ 0.1%)

## Publications

“Secure Data Storage on Multi-Cloud Using DNA Based Cryptography”, D Zingade, S Dhuri, P Naikade, N Gade, A Teke, International Journal of Advance Engineering and Research Development, March 2015