



Prakash Naikade

MSc - Media Computer Science,
Saarland University
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Computer Vision & Machine Learning Research Engineer

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Summary

I am passionate about *Machine Learning*, especially *Computer Vision & GenAI*. 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 & 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 • UX/UI
- 3D Vision, Generative AI • AR/VR

Technical Skills

- Programming:** Python, C#, C++, R, MATLAB, C, SQL
 - Packages:** PyTorch, TensorFlow, Keras, OpenCV, NumPy, Pandas, Scikit-Learn, SciPy, Matplotlib, Seaborn
 - Tools:** Jupyter Notebook, Git, Unity 3D, Blender, MS office, LATEX, Azure
 - 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

- Grade:** 1.8/1.0
- Course Modules:** 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
 - [Audited] Geometric Modeling, Machine Learning, AI, Ethics for Nerds

Bachelor of Engineering in Computer Engineering

Savitribai Phule Pune University

- Grade:** 65% (First Class)

Academic 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 and Extras

- Research Assistant** ● Full-time ● July '23 - Present
Max Planck Institute for Informatics - AIDAM Group ● Saarbrücken, Germany

Working on Radiance Field methods for Novel View Synthesis of structural-color objects created by laser marking. Facilitating interactive visualization for potential users to better understand the intricacies of view-dependent structural-colors of laser-printed images & paintings on metal plates.

- Junior Researcher** ● Part-time ● Sept '23 - Present
August-Wilhelm Scheer Institute - Digital Health Lab ● Saarbrücken, Germany

Contributing to the MediHopps & VulCAN project, working on human pose estimation, human action recognition, literature reviews, project proposals, APIs, & AR/VR tasks.

- Computer Vision Engineer 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 Engineer Intern** ● Full-time ● May '22 - Sept '22
Fenris GmbH - Motion2Coach project ● Aachen, Germany

Contributed to 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 and 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 and World Geography, Indian and World History, Indian Culture and Society, Environment, Ethics, etc. (Passing percentage ≈ 0.1%)

Publication

"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)