



Prakash Naikade

MSc - Media Computer Science,
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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, ScikitLearn, SciPy, Open3D, Matplotlib, Seaborn
 - 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

Grade: 1.8/1.0

- 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.

Bachelor of Engineering in Computer Engineering

Savitribai Phule Pune University

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)

August-Wilhelm Scheer Institute

Contributing 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

Max Planck Institute for Informatics - AIDAM Group

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

BASF-Coatings GmbH

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

Fenris GmbH

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

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