

Pramodkumar Choudhary

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Work Experience

- Dec. 2024 - current **Software developer**, *Kiutra GmbH*, Munich
- Architect and deploy individual server setups for cryostat systems using Ansible and Proxmox, enabling scalable, automated configuration and infrastructure management.
 - Design and develop a firmware manager with Docker-based deployment for seamless updates, automation to CI/CD and release management for cross-platform compatibility.
 - Led the architectural planning and implementation of a modular data processing pipeline, leveraging High-Performance HDF (Hierarchical Data Format) files format for efficient scientific data storage and retrieval.
- Mar. 2022 - Nov. 2024 **Working student software developer**, *Kiutra GmbH*, Munich
- Build and manage multi-service Docker images containing:
 - A Python Quart backend for high-performance APIs, including websockets.
 - A Next.js frontend integrating multiple single-page React-redux applications for real-time data visualisation and control interface.
 - Develop a centralised control software platform with integrated real-time data visualisation, backed by high-frequency data storage and communication systems to support responsive monitoring and control of complex hardware environments.
- May 2020 - Jun. 2020 **Web development intern**, *Indian Institute of Technology - Bombay*, Mumbai
- Implement user behaviour tracking and web interaction analysis using JavaScript and Laravel and collaborated on a data-driven media platform featuring a full video-on-demand pipeline and advanced personalisation features.
 - Build a scalable on-demand video streaming platform with AWS integration, including secure upload, personalised user experience, and an analytics dashboard for real-time data insights.
- Jun. 2019 - Jul. 2019 **Deep learning intern**, *Konsultera Solutions Pvt. Ltd.*, Mumbai
- Implement facial expression and emotion recognition system using transfer learning and feature extraction, optimising performance by configuring state-of-the-art deep learning models.
 - Transfer to a Caffe-based model in Keras, improving accessibility and integration within modern deep learning workflows.
- Jun. 2018 - Jul. 2018 **Deep learning intern**, *Konsultera Solutions Pvt. Ltd.*, Mumbai
- Develop and fine-tune object detection models on CCTV video input using the COCO dataset, evaluating performance across accuracy and frames-per-second (FPS).
 - Utilise Python, OpenCV, and TensorFlow API to retrain and benchmark multiple models for real-time surveillance applications.

Education

- Oct. 2021 - Nov. 2024 **M. Sc., Informatics**, *Technical University of Munich (TUM)*, Munich
- Grade: 1.9, German scale
- Focus Area: Machine Learning, Robotics, Scientific Computing and High Performance Computing (HPC).
- Master thesis**, Robot-adaptive Neural Inverse Kinematics Design a self-supervised, robot-adaptive model for generalisable inverse kinematics across diverse manipulators (2–6 DOF) with real-time, collision-aware performance in unseen environments.
- Aug. 2016 - Oct. 2020 **B. Eng., Computer Engineering**, *University of Mumbai*, Mumbai
- Grade: 8.38/10, CGPA
- Bachelors project**, Trail Tracker: Anti-Poaching Intelligence Develop a low-power edge-deployable computer vision model for detecting poaching activities using sensor data and AI-driven inference in remote environments.

Technical skills

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| Programming | Python, C++, Bash |
| ML Concepts | Deep learning, Reinforcement learning, Self-supervised learning |
| Web | React, Next.js, Node.js, Redux/Context, Webpack, Flask, Quart, REST, Websockets, GraphQL |
| Data | Pandas, SQL, MongoDB |
| Miscellaneous | Git, Pytorch, Docker, Redis, Ansible, Proxmox |