

Arihant Gaur

arga00002@stud.uni-saarland.de | [LinkedIn](#) | [GitHub](#) | [Website](#)

EXPERIENCE

Metacube Software Pvt. Ltd.

October 2023 – March 2025

Contractor

Remote

- Designed and implemented pipeline to parse movies using computer vision algorithms
- Also involved in automating commentary and scorecard for cricket matches using 3D skeletal human pose estimation and action recognition
- Fabricated iTransformer-based neural network architecture to determine cricket playing team 11 before a T20I match based on historical data

Mitsubishi Electric Research Laboratories (MERL)

August 2022 – March 2023

Research Intern

Cambridge, MA, United States

- Collaborated on cutting edge 3D computer vision research under supervision of Prof. Pedro Miraldo [\[Link\]](#)
- Proposed novel geometric encoder for structured 3D implicit representations. Work was published at 3DV 2024 conference in Davos, Switzerland
- Also involved briefly in a client project for surveying 3D object detection and tracking methods

Instituto Superior Técnico

May 2021 – May 2022

Research Intern

Lisbon, Portugal

- Worked on research projects related to 3D pointcloud registration and segmentation using PointNet related architectures, under supervision of Prof. Pedro Miraldo [\[Link\]](#)

EDUCATION

Universität des Saarlandes

2024 – 2026

Masters of Science in Computer Science (Grade: 1.0)

Saarbrücken, Germany

Visvesvaraya National Institute of Technology

2018 – 2022

Bachelor of Technology in Electrical and Electronics Engineering (CGPA: 9.31/10, Rank: 2/138)

Nagpur, India

Sheth N.K.T.T. College of Commerce and Science

2018

Science Stream (HSC, Percentage: 88.3%)

Thane, India

Hiranandani Foundation School

2016

Science Stream (ICSE, Percentage: 96.5%)

Thane, India

PUBLICATIONS

[Arihant Gaur](#), G. Dias Pais, Pedro Miraldo, “**Oriented-grid Encoder for 3D Implicit Representations**” in *International Conference on 3D Vision (3DV 2024)*, Davos, Switzerland [\[Paper\]](#)[\[Code*\]](#)[\[Website\]](#)

Rohit Lal, [Arihant Gaur](#), Aadithya Iyer, Muhammed Abdullah Shaikh, Ritik Agrawal and Shital Chiddarwar, “**Open-Set Multi-Source Multi-Target Domain Adaptation**” in *35th Pre-registration workshop (NeurIPS 2021)*, Remote. [\[Paper\]](#)[\[Code\]](#)[\[Website\]](#)[\[Video\]](#)

[Arihant Gaur](#), Akshata Kinage, Nilakshi Rekhawar, Shubhan Rukmangad, Rohit Lal and Shital Chiddarwar, “**Cursor Control Using Face Gestures**” in *11th International Conference on Soft Computing and Pattern Recognition (SoCPaR 2019)*, Hyderabad, India [\[Paper\]](#)[\[Code\]](#)[\[Website\]](#)

RELEVANT PROJECTS

Volumetric path tracer with MIS from scratch [\[Code\]](#)[\[Website\]](#)

October 2024 – February 2025

- Built ray tracer as a part of Computer Graphics - I [\[Link\]](#) course offered at UdS
- Bagged third prize in the rendering competition hosted during the course

Visual Odometry [[Code](#)]

March 2020 – May 2020

- Designing a pipeline for estimating the current location of the vehicle using a monocular camera as the only sensor, useful in robot localization and mapping (in conjunction with autonomous systems)
- Implemented 2D - 2D and 3D - 2D visual odometry using classical vision techniques

Structure from Motion (SfM) [[Code](#)]

July 2020 – September 2020

- Implemented camera pose estimation in world coordinates and sparse 3D reconstruction of an ordered set of images and known calibration matrix, to enable mapping of an environment for robot perception and visual localization

Health Estimation of an Electrical Machine Using an Optimal Estimator [[Draft](#)]

July 2021 – May 2022

- Developed and implemented various estimators for determining health of a three phase distribution transformer as a part of my Bachelor's thesis

SKILLS

Languages: Python, C/C++, MATLAB+Simulink

Software Tools: PyTorch, L^AT_EX, Git, COLMAP, MeshLab

Libraries: NumPy, SciPy, Matplotlib, OpenCV, Open3D, Pandas, scikit-learn

AREA RELEVANT COURSES

UdS: Image Processing and Computer Vision, Computer Graphics, Realistic Image Synthesis, Machine Learning, High-Level Computer Vision, Convex Analysis and Optimization, Image Acquisition Methods

VNIT: Single and Multivariable Calculus, Matrix Theory, Infinite Series and Ordinary Differential Equations, Integral Transforms and Partial Differential Equations, Numerical Methods and Probability Theory, Statistics and Optimization Techniques, Signals and Systems, Control System I and II, Digital Signal Processing and its Applications, MATLAB programming and simulation.

ACHIEVEMENTS

- Bagged first prize at the Smart India Hackathon, 2020 (Software Edition, Team IvLabs ([Website](#), [Video](#), [Code](#)))
- Received Academic Excellence Prize for securing 2nd highest CGPA in B.Tech. Electrical and Electronics Engg. program (2018 – 2022)
- Received Academic Excellence Prize for exhibiting the best performance in the 3rd year of B.Tech. Electrical and Electronics Engg. program

EXTRACURRICULARS

At VNIT:

- Core Member at IvLabs [[Link](#)], Robotics and AI Lab of VNIT, Nagpur
- Conducted workshops on Image Processing under IEEE VNIT Student Branch with more than 100 students
- Mentor Coordinator at Avanti Fellows VNIT Chapter
- Elected as a student mentor for 15 freshmen on college and academic related issues