



Vedang Bhupesh Shenvi Nadkarni

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ABOUT ME

A motivated student passionate about research and creating an impact in the research community, industry, and society. My research interests are Computer Vision, Deep Learning, Machine Learning and their applications.

EDUCATION AND TRAINING

B.E. (Hons.) Computer Science and Integrated MSc. (Hons) Physics

Birla Institute of Technology and Science, Pilani [02/11/2020 – Current]

City: Pilani | Country: India | Website: <https://www.bits-pilani.ac.in/>

CGPA - 8.85/10

PUBLICATIONS

[2024]

GLiDR: Topologically Regularized Graph Generative Network for Sparse LiDAR Point Clouds

GLiDR is a Graph Generative network that is topologically regularized using 0-dimensional Persistent Homology (PH) constraints and the newly introduced static points outperform LiDAR-based navigation using SLAM. It also generates an accurate binary segmentation mask of static and dynamic objects.

Prashant Kumar, Kshitij Madhav Bhat, Vedang Bhupesh Shenvi Nadkarni, Prem Kalra, CVPR 2024

Link: <https://kshitijbhat.github.io/glidr/>

[2023]

Differentiable SLAM Helps Deep Learning-based LiDAR Perception Tasks

Differentiable SLAM architectures for improving the performance of deep learning tasks such as classification and regression, as well as SLAM.

P. Kumar, D. Vattikonda, V. B. S. Nadkarni, E. Dong, and S. Sahoo, BMVC, 2023

WORK EXPERIENCE

Masters Thesis

INRIA [01/12/2024 – Current]

City: Sophia-Antipolis | Country: France | Website: www.inria.fr | Name of unit or department: MAASAI group

Knowledge injection in generative models for Data Augmentation at the MAASAI group of INRIA, working with Dr. Remy Sun, Dr. Frédéric Precioso and Dr. Diane Lingrand.

Research Intern

Universitat de Barcelona [01/07/2024 – Current]

City: Barcelona | Country: Spain | Website: www.ub.edu | Name of unit or department: Department of Mathematics and Computer Science

High quality Efficient 3D Human capture using multi-view cameras and depth, with Dr. Sergio Escalera's HuPBA group.

Summer Internship

Max Planck Institute for Intelligent Systems [28/05/2023 – 06/08/2023]

City: Tübingen | Country: Germany | Website: is.mpg.de | Name of unit or department: Robust Machine Learning Group

1. Fine-tuning a pre-trained object detection model on out-of-domain image data.
2. Designing a robust local terrain estimator for a Boston Dynamics Spot using multi-view stereo-vision point clouds.
3. Working at the Robust Machine Learning group (Wieland Brendel) with the Polybot team.

University research associate

BITS Pilani [01/03/2023 – 20/05/2024]

City: Pilani | Country: India | Website: <https://www.bits-pilani.ac.in/>

Several research projects as a part of my programme requirements

1. Multi-UAV-assisted federated transfer learning to reduce computation overload. ([Dr. Sandeep Joshi, Dept. of Electrical Engineering, BITS Pilani](#))
2. The development of a tailored ML algorithm to identify members and exotic populations in stellar open clusters and a visualization suite for users to interpret the results of the ML algorithm and further analyze data, using HoloViz. ([Dr. Kaushar Vaidya, Dept. of Physics, BITS Pilani](#))
3. Understanding the impact of using graph representations in deep learning models for to find the correct assignment of particle jets in ttbar interactions. ([Dr. Tanmoy Mondal, Dept. of Physics, BITS Pilani](#))

Internship

Intel Labs [15/06/2022 – 30/11/2022]

City: Bengaluru | Country: India | Website: <https://www.intel.com/labs> | Name of unit or department: Emerging AI Systems Lab

1. Research on Deep Learning Recommendation systems (RecSys) and optimizing RecSys for Intel's cloud computing infrastructure through software-enabled design, and hardware access control.
2. Designing experiments to analyze various optimization schemes and techniques and to understand system behavior in RecSys workloads.
3. Visualizing Complex multidimensional parameter variations by designing a custom visualization pipeline to investigate and analyze complex system behaviors and phenomena.

HONOURS AND AWARDS

[03/03/2023] Deutscher Akademischer Austauschdienst

DAAD-WISE Scholarship

Awarded a scholarship under the [Work Internships in Science and Engineering](#) by the [DAAD](#) for an internship in Germany at the [Max Planck Institute for Intelligent Systems, Tübingen, Germany](#). The scholarship included a stipend to cover the cost of travel, visa and living costs.

[02/10/2020] Homi Bhabha Centre for Science Education, Tata Institute of Fundamental Research (HBCSE-TIFR)

Certificate of Merit in The India National Astronomy Olympiad

Awarded for the selection among the top 27 students selected for and invited to the Astronomy Orientation-cum-Selection Camp 2020, which is the final selection stage for the International Olympiad on Astronomy and Astrophysics 2020. This however, scheduled to happen in April 2020 was cancelled due to the CoVID-19 pandemic.

[10/05/2019] Indian Institute of Science, India

Kishore Vaigyanik Protsahan Yojana

1. A fellowship for students pursuing the natural sciences.
2. Fellowship stipend during undergraduate studies and access to national laboratories, and universities for research.
3. Sponsored by the [Department of Science and Technology, Government of India.](#)

[04/01/2019] National Council of Educational Research and Training, India

National Talent Search Scholarship

1. National Scholarship awarded to 1000 students across India in the 10th grade.
2. Awarded for qualification based on two rounds of nationwide tests (National Talent Search Examination or NTSE) on Mathematics, Science, History, Geography, Economics, Social Sciences, and English.
3. The test is attempted by many students across India and is open to all students in the 10th grade.

Link: <https://ncert.nic.in/national-talent-examination.php>

VOLUNTEERING

[01/06/2022 – 01/06/2023] Pilani, India

Chairperson, IEEE BITS Pilani Student Chapter

Organising talks, seminars, tutorials and competitions to teach students about Computer Science, Deep Learning and Engineering.

[01/02/2022 – 28/02/2023] Pilani, India

Software Lead, CRISS Robotics, BITS Pilani

Led the design, deployment, and testing of all the software for the team's first Mars Rover Prototype, specifically involving a focus on autonomous navigation, robotic perception and hardware integration.

[01/01/2021 – 30/04/2023] Pilani, India

Astro Club, BITS Pilani

Volunteering to teach other students at my university about astronomy, using telescopes and about the use of software and programming in astronomy.

[01/12/2020 – 01/12/2021] Pilani, India

National Service Scheme

Volunteering to find science and engineering solutions to solve problems in society.

LANGUAGE SKILLS

Mother tongue(s): Konkani

Other language(s):

English

LISTENING C2 READING C2 WRITING C2

SPOKEN PRODUCTION C2 SPOKEN INTERACTION C2

Hindi

LISTENING C2 READING B2 WRITING B2

SPOKEN PRODUCTION C2 SPOKEN INTERACTION C2

French

LISTENING B1 **READING** B1 **WRITING** A2

SPOKEN PRODUCTION A2 **SPOKEN INTERACTION** A2

Spanish

LISTENING B1 **READING** B1 **WRITING** A2

SPOKEN PRODUCTION A2 **SPOKEN INTERACTION** A2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

HOBBIES AND INTERESTS

Travel

I try to find time on weekends or in vacations to travel to different places in the region where I'm based. I like to learn about their culture, food and life. When I'm in a city, I prefer walking around to really explore the city, meet people and local vendors.

Hiking