

Madhu Vankadari

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About Me:

I am a 2nd year DPhil student, working in the area of Mapping and Localization. I have around 4+ years of industrial experience in this field. I have successfully completed several projects and published papers at many reputed conferences. I am now seeking an internship position where I can expand my horizons in the vision domain. [Website](#), [G-scholar](#), [GitHub](#)

Work Experience:

Machine Vision Researcher

July-2016 - Sep-2020

[TCS Innovation Labs](#), Bangalore, India

I developed Deep Learning techniques for robot perception and control. My main responsibility was to outperform state-of-the-art methods and create new benchmarks in the field.

Summer Research Intern

May-July 2015

[Robotics and Intelligent systems Lab](#), IIT Kharagpur, India

We developed a simulation and hardware setup for a humanoid robot to implement Reinforcement Learning algorithms for a dynamically stable gait.

Education :

DPhil in Computer Science

2020- present

Advisor: Prof. Niki Trigoni, Cyber Physical Systems

Areas of Research: Depth and Ego-motion estimation, Relocalization, Scene Understanding, etc.

[University of Oxford](#)

Bachelors in Mechanical Engineering

2012- 2016

[Rajiv Gandhi University of Knowledge Technologies](#)

GGPA : 8.88/10.0

Thesis: Design of a Dynamically Stable Gait ([video](#))

Skill Sets:

Programming Languages: Python

Frameworks : Pytorch and TensorFlow

Languages : English, Hindi, Telugu

Publications:

Mapping and Localization

Nov'17-present

My main research comes from the question, "What does it take to build a **robust learnable** system that can **scale** to large-scale environments like cities?". The main research problems that I am trying to address are depth and ego-motion estimation, visual place recognition and relocalization.

Tools Used: Python, Pytorch, Tensorflow, Numpy, Scipy, CV2, PIL

Links : [code](#) , [Video](#)

Publications:

1. Garg, S., **Vankadari, M.**, & Milford, M. SeqMatchNet: Contrastive Learning with Sequence Matching for Place Recognition & Relocalization. In *5th Annual Conference on Robot Learning (CoRL)*, 2021, June. ([paper](#))
2. **Vankadari, M.**, Garg, S., Majumder, A., Kumar, S., & Behera, A. (2020, August). Unsupervised monocular depth estimation for night-time images using adversarial domain feature adaptation. In *European Conference on Computer Vision (ECCV)* (pp. 443-459). Springer, Cham. ([paper](#))
3. Bhutani, **V.**, **Vankadari, M.**, Jha, O., Majumder, A., Kumar, S., & Dutta, S. (2020). Unsupervised Depth and Confidence Prediction from Monocular Images using Bayesian Inference. In *2020 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)* (pp. 10108-10115). IEEE. ([paper](#))
4. **Vankadari, M.**, Majumdar, A., Kumar, S., & Das, K., "Unsupervised Monocular Depth and Ego-Motion Estimation using Conditional Patch GANs." *International Joint Conferences on Artificial Intelligence (IJCAI)*, 2019. ([paper](#))
5. Garg, Sourav, **Babu, V. M.**, Thanuja Dharmasiri, Stephen Hausler, Niko Suenderhauf, Swagat Kumar, Tom Drummond, and Michael Milford. "Look No Deeper: Recognizing Places from Opposing Viewpoints under Varying Scene Appearance using Single-View Depth Estimation", *IEEE International Conference on Robotics and Automation (ICRA)* 2019. (Accepted Oral) ([Paper](#))
6. **Babu, V. M.**, Das, K., Majumdar, A., & Kumar, S. (2018, October). UnDEMoN: Unsupervised Deep Network for Depth and Ego-Motion Estimation. In *2018 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)* (pp. 1082-1088). ([Paper](#))

Please refer to my Google Scholar profile for my other publications.