VISHNU DUTT SHARMA

vishnuds@umd.edu

Google Scholar GitHub

EDUCATION

University of Maryland, College Park *June 2020 - Present*
Doctor of Philosophy (Ph.D.) in Computer Science
(Transferred from Virginia Tech, August 2019-May 2020)

Indian Institute of Technology Kharagpur *July 2012 - June 2017*
Master of Technology, Bachelor of Technology
Major: Electronics & Electrical Communication Engineering
Specialization: Visual Information & Embedded Systems
Minor: Computer Science & Engineering

PUBLICATIONS

Sharma, V. D., Toubeh, M., Zhou, L., & Tokekar, P. (2020). Risk-Aware Planning and Assignment for Ground Vehicles using Uncertain Perception from Aerial Vehicles. In Proceedings of the 2020 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS-2020).

Krishna, A., **Sharma, V. D.**, Santra, B., Chakraborty, A., Satuluri, P., & Goyal, P. (2019, July). Poetry to Prose Conversion in Sanskrit as a Linearisation Task: A case for Low-Resource Languages. In Proceedings of the 57th Annual Meeting of the Association for Computational Linguistics (ACL-2019).

Krishna, A., Santra, B., Bandaru, S. P., Sahu, G., **Sharma, V. D.**, Satuluri, P., & Goyal, P. (2018). Free as in Free Word Order: An Energy Based Model for Word Segmentation and Morphological Tagging in Sanskrit. In Proceedings of the 2018 Conference on Empirical Methods in Natural Language Processing (EMNLP-2018).

Reddy, V., Krishna, A., **Sharma, V. D.**, Gupta, P., Vineeth, M. R., & Goyal, P. (2018, May). Building a Word Segmenter for Sanskrit Overnight. In Proceedings of the Eleventh International Conference on Language Resources and Evaluation (LREC-2018).

PROJECTS

SegNet: Reproducibility and Qualitative Analysis
The objective of this project was to reproduce the results obtained by SegNet using open source codes and analyze the generalizability and effect of changing brightness and contrast in the input images.

DeepVO: A Deep Learning approach for Monocular Visual Odometry
This projects proposed a deep learning-base solution for the problem of Monocular visual odometry. The results were analyzed for different varying training and testing conditions and showed promising results.

Autonomous Aerial Vehicle
Working with Aerial Robotics Kharagpur group for development of an Unmanned Aerial Vehicle (UAV), my responsibilities were focused on control and embedded systems stack of the vehicle. The team participated in International Aerial Robotics Competition (IARC) 2016, held at Beijing and won Best Team Cooperation Award

Autonomous Underwater Vehicle
As part of the Team AUV IIT Kharagpur, I worked the embedded and control stack of the underwater vehicle developed in-house.

Plagiarism Detection using Tree-kernel methods
The objective of the project was to detect plagiarism by leveraging sub-tree kernels matching over

the abstract syntax trees extracted from C source codes. It was a term-project for Speech & Natural Language Processing course offered at IIT Kharagpur.

Others Projects:

SmartKart, ROACH, Sirius

TECHNICAL STRENGTHS

Languages & Scripts	Python, C++, C, Hive, MATLAB
Packages & Frameworks	PyTorch, TensorFlow, Keras, OpenCV, Robot Operating System

WORK EXPERIENCE

Robotics Algorithms & Autonomous Systems Lab
Graduate Research Assistant — *Aug'19 - Present*

Dept. of Electrical & Computer Engineering, Virginia Tech — Aug'19 - May'20
Graduate Teaching Assistant
- *Data Structures & Algorithms* — Fall'19
- *Applied Electrical Theory* — Spring'20

American Express India Pvt Ltd — Jul'17 - Jul'19
Risk Analyst, Machine Learning & Data Science Team

Dept. of Electronics & Electrical Communication Engg., IIT Kharagpur — Jul'16 - Apr'17
Teaching Assistant
- *Digital Signal Processing Lab* — Autumn'16
- *Microcontroller Systems Lab* — Spring'17

NavStik Autonomous Systems Pvt Ltd — May'16 - Jul'16
Summer Intern

American Express India Pvt Ltd — May'15 - Jul'15
Summer Intern, Commerce Data Science Team

SERVICES

- Mentor for Object Detection and Exploration project atAI4ALL 2020 summer camp at the University of Maryland
- Reviewer for The IEEE Robotics and Automation Letters (RA-L) and Conference on Intelligent Robots and Systems (IROS) 2020