

Shaurya Dewan

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EDUCATION

CARNEGIE MELLON UNIVERSITY

Pittsburgh, PA

Master of Science in Computer Vision | GPA: 4.00 / 4.00

Dec 2024

Coursework: Advanced Computer Vision, Intro to Robot Learning, Deep Learning Systems

INTERNATIONAL INSTITUTE OF INFORMATION TECHNOLOGY - HYDERABAD

Hyderabad, India

Bachelor of Technology (Honours) in Computer Science and Engineering | CGPA: 9.12 / 10.00

May 2023

Teaching Assistantships: Automata Theory, Mobile Robotics

Coursework: Machine Data and Learning, Digital Image Processing, Computer Vision, Statistical Methods in AI

RESEARCH

ROBOTICS RESEARCH CENTER @ IIIT-H

Hyderabad, India

Undergraduate Honours Researcher - Prof. Madhava Krishna

May 2021 – May 2023

- **Canonical Fields:** Collaborated with Brown University to develop a pipeline, CaFi-Net, as a co-first author for self-supervised canonicalization of NeRF-generated fields in PyTorch-lightning; resulted in a **publication in CVPR 2023 as a highlight paper**. This pipeline employed NeRFs, Tensor Field Networks (TFNs), spherical harmonics, and MLPs.
- **Pose-Shape Optimizer Pipeline:** Recreated a pipeline in MATLAB and Ceres that reconstructs and localizes a vehicle in 3D given a monocular 2D image using shape priors. Further applied multi-view optimization over the shape to stabilize it across sequences of video frames. Made use of a deep stacked hourglass CNN model to estimate vehicle key points in the images.

PRECOC RESEARCH GROUP @ IIIT-H

Hyderabad, India

Undergraduate Independent Study Researcher - Prof. Ponnurangam Kumaraguru

Jan 2022 – Dec 2022

- **Infosys Synthetic Data Generation:** Assembled a relationship-preserving multi-table synthetic data generation system using a hierarchy-preserving variation of CTGAN from the SDV framework in Python which has since been **integrated into the Infosys Enterprise Data Privacy Suite (iEDPS)**. Also employed various classification and regression models such as Random Forest, Lasso, Ridge, SVR, etc. to model and enforce relationships between attributes.
- **Infosys Data Discovery and Disposal:** Collaborated with Infosys on automated data discovery and disposal in a heterogeneous data environment with data spread across different structured formats. We demonstrated a privacy-preserving, scalable, and efficient implementation of the data discovery pipeline in Python.
- **Factly SACH Fact Check Search Engine:** Collaborated with Factly on analyzing and improving the reverse image search pipeline within their fact check search engine.

WORK EXPERIENCE

VIRTUAL LABS

Hyderabad, India | Remote

Software Engineer Intern

May 2021 – Jul 2021

- Designed an experiment template in HTML, CSS, and JavaScript for reuse by other developers and built 10 experiments of the [Soil Mechanics Lab](#) which became the **third-most viewed IIIT-H lab** for the past 2 years with **1.2 million views**.
- Developed a plugin from scratch in JavaScript and Handlebars to help experiment developers fix major bottlenecks in various SEO aspects using Google's Lighthouse API. Modified the experiment build script to add plugin processing capabilities.

PROJECTS

IIIT-H | UNSUPERVISED DOMAIN ADAPTATION BY BACKPROPAGATION ([Link](#))

Jan 2023 - May 2023

- Implemented a [paper](#) on unsupervised domain adaptation of neural networks using a gradient reversal layer and a GAN-inspired domain classifier loss in Pytorch. Performed various experiments such as the use of additional losses to improve results.

IIIT-H | MOBILE ROBOTICS & COMPUTER VISION ([Link](#))

Aug 2021 - May 2022

- Implemented various algorithms and methods commonly used in computer and robotic vision applications. The algorithms include ICP, DLT, stereo vision, bundle adjustment, SLAM, optical flow, graph-cut segmentation, etc. Used Python.

IIIT-H | SCRABBLE ASSISTANT ([Link](#))

Aug 2021 - Dec 2021

- Designed a system from scratch that extracts the Scrabble board from an image and suggests the best word for the user's given 7 tiles and board configuration. Used Python for the backend logic and Node.js for the GUI.

IIIT-H | PEERSITY ([Link](#))

Aug 2020 - Dec 2020

- Developed the friend recommendation system based on the Markov Clustering algorithm from scratch and contributed to the back-end and UI in HTML, CSS, Node.js, React, GraphQL, and MongoDB for an IIIT-H student social media platform.

TECHNICAL SKILLS AND CERTIFICATIONS

Languages: Python, C++, C, MATLAB, R, Octave, Bash, x86

Web Technologies: HTML5, CSS, JavaScript, React, GraphQL

Libraries: PyTorch, OpenCV, Open3D, scikit-learn

Tools: Blender, Anaconda, Jupyter, Git, Postman, Latex

Databases: Mongoose, SQL

Certifications: 6th Summer School on AI by CVIT @ IIIT-H