Arjun Chauhan

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EDUCATION

Carnegie Mellon University – School of Computer Science — **Pittsburgh, PA**
Masters in Robotics Systems Development (MRSD) — May 2023

Manipal Institute of Technology, — **Manipal, India**
B.Tech in Electronics & Communication Engineering with — June 2020
Minor in Data Science | CGPA: 8.62/10

PROFESSIONAL EXPERIENCE

IoTrics — **Gurgaon, India**
Data Science and Computer Vision Developer — August 2020 – June 2021

- Implemented a **scalable end-to-end 3D SfM reconstruction API** which is used by multiple clients for training and demos; developed using Python, Flask and Celery
- Pioneered the integration of ThirdEye VR glasses with a live stream from an in-house developed drone for aerial inspection purposes
- Developed, trained, and deployed **CNN model** to scale for mask detection attaining **an accuracy of 92%** which is being **used by 200 people per day on average**

Myelin Foundry — **Bengaluru, India**
Deep Learning Intern — December 2019

- Applied deep learning algorithms such as **ESPCN and SRGAN to reduce bandwidth requirements by 40%** for Over the Top (OTT) streaming services for Hotstar (a leading OTT provider in India)
- Aided implementation and **optimized image filters** to improve visual quality of videos at the edge; **improved VMAF score by 30 units**

Karel Electronics R&D — **Ankara, Turkey**
Computer Vision Intern — July 2019

- Developed a system for cars to **detect oncoming traffic** and pedestrians using **Haar Cascades, Optical Flow and Multi-object tracker** to improve road safety using **OpenCV**, **V4L2** and **C**
- **Demonstrated system to FIAT, Turkey** at a meeting between Karel Electronics and FIAT

PROJECTS

DeepRivWidth: Applying Semantic Segmentation for River Width Measurement in SAR Images (Thesis) — **MIT, Manipal**
Advisor: Dr. Ujjwal Verma, Dept of ECE — January – July 2020

- Implemented and tested **UNet** and **DeepLabv3+** on SAR images for identifying land and water in SAR images, attaining an **accuracy of 93% (Unet)** and **98% (DeepLabv3+)**
- Developed a distance measuring algorithm using **morphological transformation and Euclidean distance** measurement and obtained an **average error of 22 meters**
- Published findings in Elsevier's Computers and Geosciences Journal

Rescue Bees — **MIT, Manipal**
Coursera Show-a-skill Challenge — September – November 2019

- Developed an algorithm **for detecting people in distress** using a **swarm of drones** aimed at **optimising rescue and relief** operations during natural disaster; implemented using **Ardupilot, ROS, and Tensorflow**
- Incorporated an algorithm to **geocode images** and relay it back to base station and **developed an application** interface using **Python and Tkinter** to plot and **show these images**

Automated Orthomosaic Generation and 3D Model Construction using Aerial Imagery — **Tata Steel**
TATA Solverhunt 2 Challenge — February – June 2018

- Developed an approach to **plan route and capture images** using drone and provide an **orthomosaic image and 3D Model using SITL, ROS and OpenCV**
- **Demonstrated this system to TATA Steel** for their inspection purposes and **won National level Challenge**

Achievements and Awards

- Awarded the second position in National level competition, Dare to Dream 2.0, organised by DRDO (2021)
- Won the Makerthon challenge held at IIT Bombay Tech Fest (2018)
- Honoured for proposed solutions to TATA Motors and TATA International at TATA's Annual Review Ceremony (2018)

Technical Skills

- **Programming Languages**: Python, C++, C, MATLAB
- **Machine Learning Libraries**: Keras, PyTorch, Tensorflow, SciPy
- **Design and Simulation Software**: LaTeX, Simulink, LTSpice
- **Hardware**: Raspberry Pi, Arduino, Tinkerboard, STM32