Vinod N. Patil

Undergraduate in Electronics and Communication Engineering. Machine Learning, Neural networks, Image Processing, and Computer Vision

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EXPERIENCE / INTERNSHIPS

Indian Institute of Technology, Delhi (IITD), India — *Project Trainee*

4 th June 2023 to 14 th July 2023 (40 days)

Worked on **Visual-Odometry using ORB-SLAM** on **NVIDIA-Jetson ORIN Nano Board** using stereo camera input.

Computer Vision and Graphics Laboratory, Hubballi, India — *Member*

July 2022 - Present

Active, an organizing member of IPCVGML Research Lab working on **Research Projects.**

EDUCATION

KLE Technological University, Hubballi — B.E.

January 2021 to June 2024

Courses of study include Basics of Digital Signal Processing, Machine Learning, Basics of Embedded Intelligent Systems (course collaborated with SAMSUNG), Basics of Operating Systems, C Programming, Data Structures and Algorithms. CGPA: 7.43/10

Prerana PU College , Hubballi — PU Education.

Feb 2019 to May 2020

A Pre University affiliated to the state board where the core courses were Physics, Chemistry, Mathematics, Biology and secured **90.33%.**

Chetan Public School , Hubballi — SSLC.

April 2017 to May 2018

Completed SSLC affiliated to the Karnataka State Board and secured **86.74%.**

SKILLS / EXPOSURES

Programming Languages: Python, C.

Tools: MATLAB(Beginner).

Deep Learning Frameworks: Pytorch,Tensorflow, Keras.

Industry Knowledge: Machine Learning, Deep learning, Image Processing and Basics of Computer
Vision

Hobbies: Playing online games and listening to music.

ACHIEVEMENTS

MIPI Challenge 2023-Night Time Flare Removal

Secured 8th place globally in the prestigious MIPI Challenge, showcasing expertise in night-time flare removal techniques and published a report on innovative night-time flare removal methods in **CVPR (Computer Vision and Pattern Recognition)**, a top-tier conference in the field.

PROJECTS

Visual Odometry on NVIDIA-Jetson ORIN Nano Board Using Stereo Camera Input (DST Sponsored IIT-Delhi Intership Project).

Description: The project utilizes **ORB SLAM** with a stereo camera on the **NVIDIA Jetson ORIN Nano Board** for real-time **Visual Odometry**. This implementation **estimates** the **camera's pose** as well as **creates a map** according to the key points detected by the camera. This system is suitable for applications like **tour guide, navigation and augmented reality on an embedded platform**.

Removal of Flare in Images Captured Under Low-light Conditions (Minor Project)

Description: **DeFlare-Net** is proposed to detect and remove inherent flares in hand-held devices caused by internal light reflection and lens scattering. Flare distortions limit computer vision applications, posing research challenges due to varying flare intensities. Existing removal methods are **sensitive** to physics assumptions, **resulting in artefacts and information loss**. DeFlare-Net **addresses** these issues.

Consistent Enhancement Of Videos Captured Under Low-light Conditions (Mini Project)

Description: A **robust model** is proposed using **deep learning**, this model consistently **enhances Low-Light images without any loss of information**, We demonstrate the results of proposed methodology on benchmark dataset in comparison with SOTA methods using appropriate **quantitative metrics**.

Detection of Non-Helmet Riders using Pytorch (CEVI Workshop Project)

Description: A **deep learning framework** was proposed for detection of Non-Helmet Riders, The model is claimed to be **robust** enough to **differentiate** between Helmet and Non-Helmet riders with **precision**.

CO-CURRICULAR ACTIVITES

Published a Report on MIPI 2023 Challenge on Nighttime Flare Removal Methods and Results for CVPR 2023.

Submitted a paper on Removal Of Flare in Images Captured under Low-light Conditions for PReMI 2023 (Accepted).

Submitted a paper on Removal Of Fog in Images for ICMISC 2023 (Accepted).

Attended 3D Vision Summer School Workshop 2023 in Hyderabad by IIIT-HYderabad.

Class Representative for consecutive 3 semesters.

DECLARATION

I hereby declare that the details furnished above are true and correct to the best of my knowledge.

Date : 22 July 2023

Place: Hubballi

Vinod N Patil