Shibin Judah Paul

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Github Portfolio

KEY PROJECTS

Vehicle Detection using Contours | Jan 23

- **Objective:** The aim of the project is to detect vehicles in an image or video simply using image processing techniques .
- **Use Cases:** Video Surveillance system for lightweight edge devices.
- **Highlight:** Simple and effective vehicle detection using image processing techniques without training on any large database or special hardware requirements.

Skills & Tech Stack: Python, OpenCV, Object segmentation, Detection and Tracking, Contour detection and comparison, and Video analysis.

Video Stabilization Using Point Feature Matching | Jan 23

- **Objective:** This project aims to develop a computer vision solution to achieve a digital form of stabilization using simple OpenCV tools and optical flow.
- **Use Cases:** Action camera, Handheld, low-light and aerial footages, and Virtual Reality
- **Highlight:** Simple and effective on the fly solution for various scenarios

Skills & Tech Stack: Python, OpenCV, TensorFlow, Optical Flow, Image processing and Stabilization.

Covid - 19 Detection from X-rays using Transfer Learning | Oct 21

- **Objective:** To develop an ML model that can accurately detect COVID-19 cases from chest X-rays.
- **Use Cases:** Assist healthcare professionals in quickly and accurately diagnosing many COVID-19 cases and providing appropriate treatment.
- **Highlight:** 98.05% Accuracy on the test set.

Skills & Tech Stack: Python, VGGNet-16, OpenCV, TensorFlow, Transfer Learning, Deep Learning, EDA of large **medical image** dataset, Feature engineering and model selection.

Space Image Data Processing and Projects | Sep 22

- **Objective:** To perform EDA and develop an ML model to predict

SKILLS

Python | C++ | Embedded C | Matlab | Javascript

Regression | Neural Networks Computer Vision | Time Series Forecasting | NLP | Data Science

NumPy | OpenCV | TensorFlow Keras | Seaborn | Matplotlib SciKit-Learn | Pandas

Image Processing | Feature Extraction | Object Detection and Tracking | Optical Flow | Stereo Vision | Image Segmentation

Arduino | Raspberry Pi | ROS Gazebo | MoveIt!

Full Stack Development | Git | SQL Amazon AWS | Google GCP | JIRA

LANGUAGES

Tamil and English - *Native / Full Professional Proficiency*

German - *Working Proficiency*

Hindi and French - *Limited / Elementary Proficiency*

HONORS, AWARDS & PUBLICATIONS

Awarded several letters of **recognition for performance excellence** on **monthly** and **quarterly** basis along with **bonus pay**.

Showcased **The Interceptor V2** on a **Doordarshan** Special Show Vaanavil **broadcasted all over Tamil Nadu.**

Galaxy Morphology prediction.

- **Use Cases:** Researchers and data enthusiasts on Kaggle can use this as a starting point for their own space data image analysis projects.
- **Highlight:** Usage of different OpenCV filters and visualization libraries to perform Spectroscopy on space data images.

Skills & Tech Stack: Python, OpenCV, SciPy, AstroPy, Filters, TensorFlow, Transfer Learning, Deep Learning, EDA of large **space image dataset**, Feature engineering and Space data visualization.

Interceptor V2 | April 2017

- **Objective:** To develop an armed robot with an array of sensors, a camera for facial recognition, and a robotic arm for pick-and-place capabilities.
- **Use Cases:** To assist security personnel with surveillance and reconnaissance missions in military borders, Mass casualty situations, and other such critical situations.
- **Highlight:** Facial recognition Accuracy: 98%, Real-time multi-sensor input, live camera feed, robotic arm, all-terrain design, and remote control via a GUI onboard a Raspberry Pi and an Arduino Mega.

Skills & Tech Stack: Python, C++, Haar Cascades, OpenCV, Circuits, Actuators, and Sensor programming,and Robot Prototyping.

EDUCATION

Rajiv Gandhi College of Engineering and Technology, Puducherry— *B.Tech. in Electronics and Communications Engineering*

MARCH 2013 - MAY 2017

Graduated **First Class** with a CGPA of **8.2 GPA**, Participated and **Won** several **Robotics Competitions** all over India, **Elected** as the **Secretary** of the **Institution of Electronics and Telecommunications Engineers** Organization and **Conducted** an **All India College Fest** with several technical and non-technical events such as robotics competitions and workshops.

Consistently placed at **Top 3 positions** in Robotics competitions conducted by top **government** and **private colleges** all over **India**.

A few notable wins include,

- **1st place** in Robo Sumo in a National level Tech Fest at **Veermata Jijabai Technological Institute (VJTI), Mumbai.**
- **2nd place** in **Project Demonstration** in a National level Tech Fest at **Pondicherry Engineering College, Puducherry.**
- **3rd place** in Robo War in a National level Tech Fest at **Government Engineering College, Kerala.**

Shortlisted as one of the top 30 teams all over India for the **Bosch Hackathon** in 2017.

Published a research paper in the **International Journal of Science, Technology & Engineering** (IJSTE) titled "**Wireless Armed Robot for Surveillance and Reconnaissance Missions**".

The paper details all the **research**, **development**, findings and future scope of the **Interceptor V1** & **V2**.

EXPERIENCE

Personal Sabbatical

JUNE 2019 - PRESENT

- Provided 24/7 in-home care for my Father during his rehabilitation after two life-saving procedures until he made a full recovery.
- **Achieved** proficiency in **German** language up to **B2 level** through self-study.
- Taught **Python** and **Basics of Machine Learning** pro-bono to the Abdul Kalam Community College students.
- In preparation for the **Tensorflow Developer Certification**, I undertook a few online **Courses** and

Workshops to hone my ML skills in different domains — **Computer Vision**, **Natural Language Processing**, and **Time Series Prediction.**

- **Built** and **designed** a few prototypes and wireframes for a **Learning Management System**, which Gamified learning, Used **Student's** individual learning data to help tailor a learning curve to aid **Teachers** and an intuitive overall dashboard for the institution's **Administration**.
- Providing in-home care for my Mother after a severe medical condition.

Mphasis Wyde, Pune, India— *Software Engineer*

Mphasis Wyde provides global Insurance Policy Administration through Wynsure, a multi-language, multi-currency solution for on-premise or cloud deployment.

JUNE 2017 - JUNE 2019

As a developer in the Web Back Office team,

- We **developed** a web application that is lightweight and responsive.
- **Worked** with software development and testing team members to design and develop flexible solutions to meet client requirements for functionality, scalability, and performance.
- **Wrote** highly maintainable, solid code for the software system, forming a core framework.
- **Collaborated** with UI/UX team to integrate UI features complying with prescribed code standards and technical design guidelines.
- **Revised**, **modularized**, and **updated** old code bases to modern development standards, reducing operating costs and improving functionality.
- **Facilitated** Scrum framework – sprint planning, backlog grooming, daily scrums, sprint reviews, and sprint retrospectives.
- **Evaluated** and **adopted** new technologies to address changing industry needs - Responsive Web design and APIs.
- **Researched** emerging technologies and current trends to stay knowledgeable in methods that could benefit the Scrum team

Current projects and other repositories: [Portfolio][Github] [Kaggle]. Certifications and Awards: [LinkedIn]