JAY REMULKAR

Softwere Engineer

9665368685 jayremulkar6@gmail.com

https://www.linkedin.com/in/jay-remulkar-b6ab29201 https://github.com/JayRemulkar
https://www.codechef.com/users/jayremulkar6

Dombivli

ABOUT

Computer Science graduate currently pursuing a Master's degree, eager to leverage knowledge and skills in software development. With a solid foundation in programming and a passion for learning, I am a motivated and hardworking individual seeking hands-on experience alongside a team of professionals. I possess a strong understanding of software development concepts and am enthusiastic about exploring new technologies.

EDUCATION

MSC CS, BK Birla College, Kalyan
Mumbai University — 06/2022 - 06/2024

BSC CS, SPK College, Sawantwadi
Mumbai University — 06/2018 - 05/2021

HSC,RPD Highschool, Sawantwadi
Higher secondary school certificate — 06/2016 - 02/2018

SSC,RPD Highschool, Sawantwadi
Secondary school certification — 06/2014 - 03/2016

SKILLS

Python, Computer Vision, Object Detection, Object Tracking, Image Classification , Instant Segmentation, Semantic Segmentation, OpenCV, PIL, Numpy, Scipy, PyTorch, TensorFlow, Machine Learning, Ultralytics YOLO, Image Processing, Scikit-Learn, Django, CPP, Java, Go, SQL, OOP, DSA, Web scraping, linux, Ubuntu, Machine Learning

INTERNSHIPS

Computer Vision System Engineer
Pune banner

Elansol Technologies — 10/2023 - 05/2024

- Contributed to integrating AI capabilities into the company's WorkXpert product. Developed a communication socket for seamless interaction between WorkXpert software and AI scripts.
- Designed and integrated an AI training tool into WorkXpert, a Python-based desktop application with a GUI built using PyQt5 module. Implemented a model training algorithm using TensorFlow's ResNet152 model, enabling cross-platform functionality. The tool facilitates seamless data collection, annotation, model training, and validation, simplifying model training and deployment processes.
- Collaborated on multiple vision-based safety system projects including Band Saw Machine, Seam Welding Machine, and Seaming Machine. Contributed to image data collection, filtration, and preprocessing using various methods, as well as data annotation with tools like Labelme or Roboflow. Prepared image datasets and conducted model training with parameter tuning, followed by rigorous model validation.
- Developed and Deployed an automated monitoring service script for vision-based safety systems, designed to detect potential hazards and store records locally and in an online MongoDB database. Implemented functionality to send daily, weekly, and monthly hazard counts via email and Telegram, enhancing record tracking and safety management.
- Developed and maintained multiple vision-based algorithms for tasks including object detection and tracking, instant segmentation, image classification, and semantic segmentation.
- Conducted thorough research to select optimal camera optics, considering factors such as lens type, aperture size, sensor size, and working distance, to ensure precise and effective imaging.
- Proficient in setting up Jetson Nano, Xavier, and Orin for deployment purposes.
- Developed and maintained a computer vision-based gesture detection algorithm, seamlessly integrated into WorkXpert to facilitate guided assembly processes.

MINI PROJECTS

Web Data Scraper

Developed an automation script to scrape data from source links provided in a file or CSV, enhancing data extraction efficiency and accuracy.
Utilized the following Python modules:

- **request** for handling HTTP requests.
- **os** for interacting with the operating system and for file handling.
- **BeautifulSoup** for parsing HTML and XML documents.
- **pandas** for CSV file reading and manipulation.

Duplicate File Remover

Created a robust script that accepts a directory path and efficiently removes all duplicate files by calculating and comparing file checksums, ensuring optimal storage utilization.
Utilized the following Python modules:

- Leveraged the **os.path** module for seamless directory traversal, enabling efficient navigation through directories to identify and handle duplicate files.
- Implemented **hashlib**'s MD5 algorithm to generate checksums of files, facilitating efficient comparison for duplicate identification.

Running Process Log

Crafted a dynamic script that monitors running processes, capturing essential information and logging it into a file. Then, it automatically sends this log file to a specified email address at predefined intervals, ensuring timely updates and effortless monitoring of system activities.
Utilized the following Python modules:

- Utilized **psutil** to gather information about running processes.
- Utilized **os** module to create a file for storing process data, ensuring efficient logging and data management within the script.
- Integrated **email** module for composing and formatting email messages, ensuring smooth delivery of logs to the specified email address.
- Employed **smtplib** for sending emails, enabling seamless communication with email servers.

PPE Detection Safety System

Developed a computer vision-based PPE detection safety system for construction sites, monitoring and tracking workers' compliance with PPE requirements. The system generates alerts via email if PPE is not detected.

- Leveraged **PyQt5** for intuitive GUI development
- Integrated **OpenCV** (cv2) for real-time video feed processing
- Utilized Ultralytics **YOLOv8** for precise object detection capabilities
- Employed **email** and **smtplib** modules for seamless email functionality
- Implemented **threading** to optimize email sending functionality

Custom Standard Template Library

Designed and implemented a custom Standard Template Library **(STL**) in C++, featuring generic code for data structures such as singly linear linked lists, singly circular linked lists, doubly linear linked lists, doubly circular linked lists, stacks, queues, and trees.