TUNG DINH

Machine Learning / Computer Vision Engineer

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SUMMARY

Experienced computer vision engineer adept at integrating insights from diverse domains, including machine learning, geospatial information science, and architecture and engineering, to develop innovative solutions to address real-world challenges. Seeking a challenging role in machine learning and computer vision to apply expertise and drive innovation.

PROFESSIONAL EXPERIENCE

Technical Design Intern | Walter P Moore - Houston, TX — June 2022 - current

Machine Learning/ Computer Vision:

- Researched, trained, and fine-tuned various machine learning algorithms, including the YOLOv8 model, on a custom dataset to determine the optimal solution for car detection tasks.
- Developed a computer vision pipeline using OpenCV to process aerial imagery taken from drones or satellites and extract their useful geotagged data.
- Utilized advanced image processing techniques, including feature detection and descriptor matching, to accurately georeference the drone images.
- Leveraged insights from geospatial science to develop an algorithm that estimates the location of the detected cars and maps them onto satellite imagery, enhancing efficiency in parking analysis.

Programming:

- Developed a parking layout generator using Python and Grasshopper to produce complex parking layouts, detailed 3D models of garage structures, and accurate parking space counts.
- Collaborated with the cross-functional team of engineers and designers to gather information on parking requirements and structural frameworks in varied contexts.

PROJECTS

Object Tracking | Optical Flow | links: **code**, **demo** — February 2024

- Track a moving object in a video and segment it from the background by applying a combined techniques of optical flow and the Segment-Anything Model.

Image Classification | Parking Occupancy Analysis | links: **code**, **demo** — May 2023

- Employed the pre-trained VGG16 model for feature extraction and subsequently trained an XGBoost classifier to predict the occupancy of a parking stall.
- Tackled the challenge of distinguishing parked and moving vehicles by applying a binary mask on the original image, extracting only parking stalls, and fed it into the image classification pipeline.

CORE COMPETENCIES AND TECHNOLOGIES

Programming: Python, C/C++, SQL, and a strong background in object-oriented programming
Image processing: OpenCV, Pillow
Machine learning frameworks: Scikit-learn, Tensorflow, PyTorch
Data preprocessing and analysis: Numpy, Pandas, Matplotlib, Seaborn
Database: MySQL, MongoDB
Coursework: Data Science, Machine Learning, Linear Algebra, Probability and Statistics

EDUCATION

University of Houston - Houston, Texas
Bachelor of Science in Computer Science, Cum Laude — August 2023
GPA: 3.26