Muja Kayadan

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Career Summary

A Computer Vision Engineer with 2 years of experience developing and optimizing AI-powered computer vision algorithms for industrial applications, enhancing productivity and operational efficiency.

Skills

Languages Python, C++, MATLAB
Computer Vision Object Detection, Object Tracking, Image Processing, Feature Extraction, Semantic Segmentation, Instance Segmentation, Real-Time Video Analysis, Action Recognition, Depth Estimation, Visual Question Answering
Machine Learning Convolutional Networks, Transfer Learning, Generative Networks, NLP, Transformers, Unsupervised Learning, Reinforcement Learning, Dimensionality Reduction, Anomaly Detection, Time Series Analysis
Frameworks OpenCV, TensorFlow, PyTorch, Keras, Scikit-Learn

Work Experience

R&D Machine Learning Engineer 06/2020 - 05/2021
Orsan (Mercedes-Benz Turk A.S) *Aksaray, Turkiye*

- Developed a computer vision solution for laser steel welding quality control using OpenCV and TensorFlow, achieving a 92% accuracy in defect detection and a 30% reduction in welding defects.
- Engineered a real-time monitoring framework with U-Net-based algorithms, reducing false positives by 25% and optimizing the efficiency of the quality control system.

Application Engineer 06/2019 - 10/2019
TeknoWorld GmbH *Dusseldorf, Germany*

- Designed and deployed smart camera solutions leveraging Dahua systems for enhanced video analytics, resulting in increased customer satisfaction across over 20 clients.
- Implemented customized solutions for specific customer needs, demonstrating strong problem-solving skills and adaptability in diverse environments.

Software Engineer 06/2018 - 10/2018
Ventspils International Radio-Astronomy Center *Ventspils, Latvia*

- Developed a GUI for Max2828 and Max5866 RF transceiver ICs, facilitating seamless communication for OFDM 802.11 WLAN applications.
- Streamlined user interactions, enhancing usability and resulting in significant time savings during operation.

Education

Maharishi International University Iowa, USA
M.Sc in Computer Science *2023 - now*
Key Courses: Artificial Intelligence, Algorithms, Modern Programming, Computer Vision, Big Data Analytics, Cloud Computing

University of Padua Padua, Italy
M.Sc in Computer and Information Sciences *2021 - 2023*
Key Courses: Computer Vision, Machine Learning, Digital Signal Processing, Human Computer Interaction, Internet Of Things And Smart Cities

Aksaray University Aksaray, Turkey
M.Sc in Electrical Electronics Engineering *2019 - 2021*
Key Courses: Mobile Robots: Models and Algorithms, Machine Learning Theory

Projects

NFS Most Wanted Self-Driving Car with OpenCV and TensorFlow | *OpenCV, TensorFlow* 2022

- Developed a self-driving car system within the NFS Most Wanted environment using computer vision algorithms to detect lines and lanes for navigation.
- Implemented object detection techniques to identify and track vehicles and pedestrians, enhancing safety and maneuverability.

Fairfield Wildlife Surveillance | *YOLOv8, Raspberry Pi4, RoboFlow* 2023

- Conceptualized and implemented the project's architecture, achieving a 95% F1 score with the YOLOv8 object detection model.
- Developed a website allowing users to select animal classes for recording and adjust confidence thresholds for detection, integrating seamlessly with the surveillance system.

Raspberry Pi-based Wild Boar Detection and Deterrence System for Corn Fields | *Raspberry Pi4, YOLO5, OpenCV*

- Developed a rapid object detection model based on YOLO5 trained on wild boar images to protect crops from wildlife threats.
- Implemented a responsive system that captures videos and sends alerts upon detection, effectively safeguarding agricultural fields.

Image Stitching with OpenCV - C++ — GitHub | *C++, OpenCV* 2021

- Conducted image stitching operations using C++ and OpenCV, developing a robust system for creating cohesive panoramas from multiple images.
- Utilized keypoint and feature-based techniques to achieve high-quality stitching results, enhancing the versatility of the system for various applications.

Awards & Achievements

68th Iowa Reserve Chess Championship Winner: Issued by Iowa State Chess Association, 4 Rounds G/60 d5 (Aug 2023)
High Honors Degree: Awarded to Bachelor alumni who have graduated with a 3.60 GPA as 3rd of the faculty by Aksaray University. (Jun 2019)
TUBITAK Scientist Support Programs Presidency Winner: Egg Sex Classification with Morphological Methods" at the Food and Agriculture Category of 2242-University Students Research Project Competitions organized by TUBITAK Scientist Support Programs Presidency won the first prize in the Kayseri Regional Exhibition. (Jun 2019)
University of Padua Scholarship: Awarded to graduate students who have been successful in the educational and professional area. Fee waiver + 7000€ / year grant. (Sep 2021 - Sep 2023)

Publications

High Accuracy Gender Determination Using the Egg Shape Index Jan, 2023
Nature - Scientific Reports