Ben Akhovan

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Experience

Algolight (Mafat), Machine Learning Research and Development, March 2024 - Present

- **Deblurring and Video Enhancement Pipeline:** Researched and implemented DL based solution for restoring blurred images and frames in videos. Built a scalable processing framework for high-resolution inputs using multi-GPU acceleration.
- **Unified Vision Training Framework:** A scalable and modular PyTorch framework for training image-based models—including classification, regression, and re-identification—with support for CSV-labeled datasets, data augmentation, class balancing, metric learning losses, and distributed multi-GPU training across various backbone architectures.
- **General Tools for Vision and Model Optimization:** A multi-purpose toolkit for image/video processing, YOLO comparison, LLM-based image description, and TensorRT conversion, optimized for deep learning workflows.
- **Vehicle Counting:** Contributed in research and development of a system for counting vehicles. Including working on logic and algorithm, optimizing the pipeline to optimally utilize the resources while running (GPU, CPU). Fixed and increased existing dataset, trained and optimized models using TensorRT. Created and provided a full web tool for the client to use, including direct communication with the client and reiteration according to changing needs.
- **Universal Labeler:** Designed and implemented a complete robust and flexible AI system for automated detection, segmentation, and tagging. Integrated multiple state-of-the-art models under one inference pipeline, allowing flexibility between different tasks and combinations, including simple interface for adding and changing functionalities. Managed GPU resource allocation and asynchronous processing.
  Researched each model, including optimal usage, parameter tuning, training if needed, then implemented and assimilation in the pipeline.
  Developed the entire SAHI+TTA algorithm as part of the project, including CPU/GPU optimization and flexibility.
  Researched and developed an entire flow which utilizes VLLMs to auto classify large data.
- **Fine grained image semantic segmentation pipeline:** Researched and developed a solution for semantic image segmentation for aerial images. Researched clustering algorithm both using deep features and classical solutions.

Cloud-Wise, Software Engineer, November 2022 - September 2023

- Developed a framework for training and using ANN models to analyze accelerometer data.
- Utilized Google Colab for training and Weights & Biases for tracking and analyzing model performance.
- Built a Windows service to run a web API to enable the model's usage, training and monitoring.
- Rewrote existing server functionality to improve performance and reliability.
- Extended website and service functions.

Education

Tel Aviv University

B.Sc. in Electrical Engineering.
Expected graduation date: August 2025.

National Cyber Program Magshimim - Graduate of the program.