Seaqueue Cheng

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Education

Northeastern University, Portland, ME — Sept. 2024 – Present
Major in MSAI at Roux Institute: Relevant coursework: NLP, Unsupervised Learning
Northeastern University, Boston, MA — Sept. 2020 – May 2024
Major in Computer Science at Khoury College

Skills

Tools: Python, Java, Pytorch, OpenCV, NumPy, Pandas, Plotly, CVAT, Roboflow, React (HTML + CSS + JS/TS), Ruby, Racket, Lean, C, Assembly, PostgreSQL, SQL alchemy
Software: MacOS, GitHub & GitLab, VS Code, Jupyter Notebook, IntelliJ, PyCharm

Research

Herring Fish Detection and Counting (NEU & MIT Sea Grant): Sept. 2024 – Present

- Preprocessed 162K fish images including annotation, augmentation, regrouping, converting file types, renaming.
- Generated 5k synthetic fish images with **SAM2** models on different backgrounds.
- Fine-tuned pre-trained **Yolo11** on HPC to 90%+ accuracy on Herring vs non-Herring detection.
- Combined with **Yolo11 Counting (Bot-Sort)** to count the fishes passing through the fish ladder.

Shellfish Detection (NEU & MIT Sea Grant): Feb. 2025 – Present

- Preprocessed 6k annotated shellfish-larvae
- Fine-tuned pre-trained **Yolo11** on HPC

Multi-Spectral Image Segmentation (NEU & UMaine): Feb. 2025 – Present

- Preprocessed self-collected multi-spectral drone images of **blueberry** fields including alignment and annotation.
- Adapted multi-spectral images to existing segmentation models, process 3 bands a time, combine results.

Projects

OpenCV University Projects:

- Learned basic image processing techniques, noise reduction, geometric transformations, etc.
- Build Lenet-5 from scratch trained with MNIST dataset; it can classify handwritten numbers.

Transformer model: Tasks with Transformer

- Build transformer-based NLP & ViT models from scratch for tasks including translation, summarization etc.

Experiences

Global Nursing Talent Inc.
Full Stack developer, CO-OP: Aug. 2023 – Dec. 2023

- Developed the website in Ruby from scratch to production that helps to recruit nurses.
- Including features like login, dashboard, profile, searching, filtering, etc.
- Stored texts-based info to PostgreSQL, and files/images to AWS; Streamlined overall UI/UX with Bootstrap.

Seminaut Inc, San Marcos, TX
Full Stack developer, CO-OP: July 2022 – Dec. 2022

- Pushed the website to the next version by implementing events information, pagination, badge System, and filters using CRUD API calls with SQL alchemy database.
- Promoted to group leader of 9 teammates in Oct. 2022. Led the team to design and implemented interactive Post System that users can share texts and images with followers and the basic Bracket System for tournaments.