Seaqueue Cheng

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Education

Northeastern University, Portland, ME — Sept. 2024 – Present
Major in **MSAI:** Coursework: NLP, Machine Learning, Algorithms
Northeastern University, Boston, MA — Sept. 2020 – May 2024
Major in **BSCS:** Coursework: OOD, Network and Distributed Systems, Computer Systems, Program Language, Web Dev

Skills

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

Research

Shadow removal using estimated ISD map (NEU): Sept. 2025 – Present

- Improved the existing ISD estimation model by refining the ground truth annotation and the model architecture.
- Built the pipeline to remove shadows in 16-bit linear images using ISD estimation.

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

- Preprocessed 162K fish images including filtering, annotation, augmentation, etc.
- 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 classification.
- Combined customized counting algorithm with Yolo11 tracking (Bot-Sort) to count the fishes in video inputs.

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

- 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

Transformer models: Tasks with Transformer

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

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.

Experiences

cPort Credit Union, Maine
AI Research and Development: Aug. 2025 - Present

- Built a live translation product between English and 20+ other languages using Azure AI speech.
- Fine-tuned AI speech models with cPort knowledge base and its targeted clients' needs.

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.

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

- Pushed the website to the next version; promoted to group leader of 9 teammates in Oct. 2022.