

# 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, Sqlalchemy

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 (Byte Track)** 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

Hyperspectral Image Segmentation (NEU & UMaine):

Feb. 2025 – Present

- Adapt hyperspectral images to current segmentation models, process 3 bands a time, combine results.
- Look into Vision transformer models to segment hyperspectral images.

## Projects

OpenCV University Projects:

- Learned basic image processing techniques, noise reduction, geometric transformations, etc.
- Build Lenet-5 from scratch using MNIST dataset.

## 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 the first nurse.
- Set up multi-login, dashboard, progress-bar and languages switching between English and Spanish to fit the company's new target clients in Mexico, Singapore, Canada and Chile.
- Created searching, filtering and granting features for admin to recruit candidates.
- 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: [Guild Gaming](#)

July 2022 – Dec. 2022

- Pushed the website to the next version by implementing events information, pagination, badge System, filtering on events, venues and articles which all involve taking user inputs, saving, and fetching data to and from the Sqlalchemy database through API calls.
- Promoted to group leader of 9 teammates since 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.