

# Seaqueue Cheng

(207)318-7055 | Portland, ME | [cheng.qian@northeastern.edu](mailto:cheng.qian@northeastern.edu) | [My Website and Work](#)

## Education

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**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

## Skills

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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

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

- Improved the existing ISD estimation model by adding more training data and updating 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

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**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

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**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.