Hyunjin Cho

+1 (626) 250-7196
hyunjin-cho@uiowa.edu
https://uiowajincho.github.io

Interests

- Applying machine learning to medical data
- Computational biology
- Computational epidemiology
- Precision medicine

Skills

Languages:

- **Proficient:** C#, Dart, Java, Python
- **Familiar:** C++, Javascript, MATLAB

Frameworks & Libraries: Flutter, OpenCV, PyTorch
Operating Systems: Linux, Mac OS X, Windows

Education

University of Iowa Aug. 2022 – May 2024
M.C.S. Master in Computer Science Iowa City, IA

University of Utah Aug. 2012 – Aug. 2017
B.S. Major in Computer Science (Data track) Salt Lake City, UT
Minor in Mathematics

Professional Experience

Gen Sci Lab Research Assistant Sep. 2022 – Current
Otolaryngology-Head & Neck Surgery Iowa City, IA

- Early Parkinson's disease detection from pharyngeal High-Resolution Manometry.
- PyTorch, Matlab

Co-founder & CTO Apr. 2021 – Apr. 2022
DiveFlash Jeju, South Korea

- Researching image processing algorithms to enhance underwater photographs.
- Prototyped a fish identification neural network.
- Published a mobile application on iOS App Store and Android Play Store named DiveFlash.
- OpenCV, C++, Flutter, YOLO and Python

Java Software Developer Freelancer Apr. 2020 – Dec. 2020
ICanManagement Seoul, South Korea

- Developed and maintained Web, Mobile application of SK Magic Inc. Malaysia
- Contract-based work with plans to attend a graduate program post-COVID.
- Java, Javascript, Oracle DB and Linux

System Integration Coordinator Jan. 2020 – Mar. 2020
Xandar Kardian

- Deployed, calibrated, and configured healthcare devices utilizing Ultra-WideBand radar.
- Collaborated on system integration with products sourced from external companies.
- Contract-based work with plans to attend a graduate program post-COVID.
- C, C#, Javascript, Linux

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Assistant Research Engineer Dec. 2018 – Dec. 2019
EnDCS Gyeonggi, South Korea

- Developed combat simulator for the Republic of Korea Navy's Aegis destroyers class battleship KDX-III Batch-II.
- C#, WPF, C++, DDS, TCP, and UDP

Corporal Nov. 2017 – Nov. 2018
Republic of Korea Army Gyeonggi, South Korea

- Capital Corp's command center as Army RTO(Radio Telephone Operator)

Undergraduate Researcher May 2016 – Aug. 2017
University of Utah Salt Lake City, UT

- Developed automated grading service for CS3505 - Software Practice - II(C++)
- Advised by Prof. David E. Johnson at the University of Utah

Teaching Assistant Feb. 2016 – May 2017
University of Utah Salt Lake City, UT

- CS1030 : Foundations of Computer Science
- CS1410 : Object-Oriented Programming
- CS2100 : Discrete Structures

Current Projects

Deep learning-based identification of dysphagia in early Parkinson disease using High Resolution Manometry(HRM).

- Benchmarked using CNN and RNN architectures, including GRU and LSTM variations.
- Processed and prepared raw sensor data for machine learning applications.
- Achieved notable accuracy in several iterations of a 10-fold cross-validation; observed overfitting in specific folds due to data constraints.
- Actively exploring feature extraction and data augmentation strategies to mitigate overfitting issues.

NEAT(Neuro-Evolution of Augmenting Topologies) Based Vaccine Allocation for Effective Epidemic Intervention.

- Utilizing reinforcement learning to address vaccine allocation challenges.
- Model exhibits more stability over traditional methods such as Page Rank, Highest Degree, and NetShield.
- Actively working on research and modifications to elevate our model to industry-leading performance.