

Hyunjin Cho

PHD STUDENT · COMPUTER SCIENCE

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Research Experience

University of Iowa – Department of Computer Science

Iowa City, IA, USA

ADVISOR: DR. RAHUL SINGH

2024 - Present

- Cancer organoid & parasite segmentation from Bright-field Microscopy image using Topology-based Computer Vision
- Developing topological frameworks for biomedical research problems.
- Languages: MATLAB, Python, GUDHI

University of Iowa – Department of Neurosurgery

Iowa City, IA, USA

ADVISOR: DR. JEREMY GREENLEE

2023 - Present

- Investigating neural connectivity during voice pitch control via ECoG and fMRI.
- Developed and distributed Windows software (GVPT - Guided Visual Pitch Tracking, APT - Auditory Pitch Tracking) to propose a new study paradigm.
- Languages: MATLAB, C++, Python, C#

University of Iowa – Department of Otolaryngology

Iowa City, IA, USA

ADVISOR: DR. MATTHEW HOFFMAN

2022 - Present

- Ulowa Remote Voice - mobile application for remote aging-related voice disorder study in rural Iowa area.
- Topological data processing for High-Resolution Manometry
- Languages: Dart/Flutter, Python, Node.js

Education

University of Iowa

Iowa City, IA, USA

PHD STUDENT IN COMPUTER SCIENCE

2024 - present

- Advisor: Dr. Rahul Singh

University of Iowa

Iowa City, IA, USA

MCS MASTER OF COMPUTER SCIENCE

2022 - 2025

- Human Brain Research Lab Advisor: Dr. Jeremy Greenlee
- Matthew Hoffman Lab Advisor: Dr. Matthew Hoffman
- Academic Advisor: Dr. Kasturi Varadarajan

University of Utah

Salt Lake City, UT, USA

BS COMPUTER SCIENCE

2012 - 2017

- Minor in Mathematics
- Data Track
- Dean's List

Professional Experience

- 2026- **Founder**, Rad Science
- 2021-2022 **Co-founder & CTO – Underwater Image Processing Company**, DiveFlash
- 2020 **Java Software Developer – Freelancer**, ICanManagement
- 2020 **System Integration Coordinator – Freelancer**, Xandar Kardian
- 2018-2019 **Assistant Research Engineer – Developed Battle Stimulator for the South Korean Navy**, EnDCS
- 2017-2018 **Corporal – Army Communication Systems Operator**, Republic of Korea Army

Teaching Experience

Spring 2025 **CS2230 – Data Structures**, Teaching Assistant, University of Iowa
Fall 2024 **CS4980 – Adversarial Machine Learning**, Teaching Assistant, University of Iowa
Spring 2017 **CS2100 – Discrete Structures**, Teaching Assistant, University of Utah
Fall 2016 **CS1410 – Intro. to Object Oriented Programming**, Teaching Assistant, University of Utah
Spring 2016 **CS1030 – Foundations of Computer Science**, Teaching Assistant, University of Utah

Publications

PUBLISHED

Eric Vallin, Brian Mostaert, Emma Thayer, **Hyunjin Cho**, Matthew Hoffman, Martin Cassell, Douglas Van Daele. 2025. *FOXP2 expression in the rodent, rhesus monkey, and human brainstem*. Journal of Speech, Language, and Hearing Research

Hyunjin Cho, Rahul Singh. *Organoid Segmentation Using Phase Congruency and Persistent Homology*. 2025. Proceedings of the 20th International Symposium in Visual Computing

PRE-PRINT

Hyunjin Cho, Farhad Tabasi, Jeremy Greenlee, Rahul Singh. 2025. *GVPT: A software for guided visual pitch tracking*. arXiv. <https://arxiv.org/abs/2505.00750>

IN WRITING

Hyunjin Cho, Farhad Tabasi, Jeremy Greenlee. *APT – The Auditory Pitch Tracking Application*

Hyunjin Cho, Rahul Singh *Swallow Detection from Pharyngeal High Resolution Manometry using Persistent Homology*

Posters

Farhad Tabasi, Roozbeh Behroozmand, **Hyunjin Cho**, Christopher K. Kovach, Christopher I. Petkov, Matthew A. Howard III, and Jeremy D. Greenlee. 2024. *Defining the Human Neural Network for Vocal Production and Control*. 10th Annual BRAIN Initiative Conference

Miscellaneous

AWARDS

2022 **Intelligent Systems in Geoscience Award**, 2022 Ulowa Hack-a-thon

OUTREACH

2023-2024 **University of Iowa**, iPeer Mentorship Program Mentor

2023 **Iowa State Fair**, Graduate Research Ambassador

OTHER PROFESSIONAL EXPERIENCE

2021 **PADI**, Scuba Divemaster