JERRY NGO

Personal Website ◇ Google Scholar ◇ GitHub
ngop@mit.edu

EDUCATION

Beloit College *Beloit, WI*
B.A. in Computer Science and Mathematics Major August 2019 - December 2022
GPA: 3.92/4.0

RESEARCH AND WORK EXPERIENCE

McGovern Institute for Brain Research @ MIT BCS *January 2023 - Present*
Research Associate *Advised by James DiCarlo*
- Construct the first optical illusion dataset for modeling and benchmarking.
- Benchmark the similarities and differences between ML models and human behavior.

Embodied Intelligence Group @ MIT CSAIL *September 2022 - Present*
Undergraduate Researcher *Advised by Yoon Kim*
- Measured the geometric similarities of representation spaces from models trained on different modalities.

Vision Group @ MIT CSAIL *August 2021 - December 2022*
Undergraduate Researcher *Advised by Phillip Isola*
- Designed a pipeline to test how a large vision-language model, CLIP, performs as a visual system.
- Discovered that CLIP's susceptibility to optical illusions and its alignment with human cognitive concepts.

Theory of Computation Group @ MIT CSAIL *June 2021 - August 2021*
Undergraduate Researcher *Advised by Aleksander Mądry*
- Investigated the impact of data augmentation and adversarial training on deep representations.
- Discovered that data augmentation is not enough to achieve robustness and invariance.

Mathematics and Computer Science Department @ Beloit College *October 2019 - June 2021*
Research Assistant
- Conducted a deep comparative analysis of machine learning models for leaf detection task.
- Optimized a graph visualization program for generating attribute-specific graphs.

PUBLICATIONS

Jerry Ngo, Yoon Kim, "What Do Language Models Hear?"
Under review for ACL 2024.

Jerry Ngo, Swami Sankaranarayanan and Phillip Isola, "Is CLIP Fooled by Optical Illusions?"
ICLR TinyPaper 2023 (Invite to Present, 32.8%) [PDF]

PROJECTS

StyleWav: Guiding Image Synthesis Using Audio *2022*
- Coded a pipeline combining CLIP with StyleGAN to generate photos of human faces from voice audio [PDF]

TALKS

MIT, Second MIT-Google Workshop *January, 2024*
Dartmouth College, New England Computer Vision Workshop *December, 2023*
MIT, MIT CSAIL-LIDS Machine Learning Advances Symposium [Poster] *May, 2023*
Washington University in St. Louis, Midstates Research Symposium In Physical Sciences *November, 2022*
University of Chicago, Midstates Research Symposium In Biological Sciences and Psychology *November, 2022*
MIT, MIT Summer Research Program Poster Session [Poster] *August, 2022*
MIT, CSAIL LLM Summer Working Group *July, 2022*
Beloit College, Annual Student Symposium *April, 2022*
University of Chicago (online), Midstates Research Symposium In Physical Sciences *November, 2021*
MIT (online), IEEE MIT Undergraduate Research Technology Conference *October, 2021*
MIT, MIT Summer Research Program Poster Session [Poster] *August, 2021*
Beloit College, Annual Student Symposium *May, 2021*
Beloit College, Annual Student Symposium *May, 2020*

SERVICES

Reviewer

- ICLR TinyPaper *2024*
- MIT Summer Research Program *2024*

AWARDS

Presidential Scholarship: Awards $32,000 annually *2019-2023*
Beloit College Grant: Awards $10,300 annually *2019-2023*
MIT Summer Research Program, *Participant* *2021, 2022*
Ferwerda Merit Scholars: Awards 15 students at Beloit College with academic excellence in STEM *2021, 2022*
Google Computer Science Research Mentorship Program, *Recipient* *2021*
Jackson J. Bushnell Mathematics Prize: Recognizes excellence in mathematics of one freshman *2020*
Consolation Prize in the **Vietnamese National Olympiad in Informatics**, *Top 100* *2018*

TEACHING EXPERIENCE

Learning Enrichment & Disability Services, Beloit College *November 2021 - Present*
Tutor

- Courses: Discrete Structures, Calculus I.
- Host one-on-one tutoring sessions to help students with coursework.

Mathematics and Computer Science Department, Beloit College *August 2020 - December 2021*
Teaching Assistant

- Courses: Intro to Object Oriented Programming, Data Structures and Algorithms.
- Organize office hours each week to help students understand programming concepts and approach the projects.
- Create JUnit tests for weekly course projects.

RELEVANT COURSEWORK

Computer Science: Convolutional Neural Networks for Visual Recognition, Neural Networks and Deep Learning, Algorithm Design & Analysis, Data Structures and Algorithms, Threads & Operating Systems, Computer Architecture, Computer Models & Languages, Computer Network.
Math: Linear Algebra, Mathematical Statistics, Vector Calculus, Real Analysis, Abstract Algebra.
Other Courses: Introduction to Cognitive Science, Principles of Economics.

LEADERSHIP AND COMMUNITY INVOLVEMENT

MIT Vietnamese Student Association, MIT
Event Coordinator *September 2023 - Present*

- Coordinate monthly events that celebrate Vietnamese culture and foster connections among individuals of Vietnamese descent within the MIT community.

MakerLab, Beloit College
President, Supervisor *February 2020 - May 2022*

- Oversee and instruct students how to use the 3D scanner, soldering iron, laser cutter, heat gun, and etc.
- Coordinate and prepare the material for monthly events.

Beloit College Minecraft Server, Beloit College
Administrator *November 2020 - May 2022*

- Get funded by Beloit College to maintain a school Minecraft server.
- Code and install plugins, mods for the server.
- Manage the player base using database and Discord.

Students Who Code, Can Tho, Vietnam
President *July 2017 - September 2020*

- Founded the first programming organization for high school students in Can Tho City.
- Developed simplified guides on modern languages, such as XML, Python, C++, with many real-life projects and even mobile applications.
- Introduced programming language to more than 200 students and held five events at school.