

JERRY NGO

[Personal Website](#) ◇ [Google Scholar](#) ◇ [GitHub](#)

ngop@mit.edu

EDUCATION

Beloit College

Computer Science and Mathematics Major
GPA: 3.92/4.0

Beloit, WI

August 2019 - December 2022

RESEARCH AND WORK EXPERIENCE

McGovern Institute for Brain Research @ MIT BCS

Research Technician

January 2023 - Present

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

Undergraduate Researcher

September 2022 - December 2022

Advised by Yoon Kim

- Measured the geometric similarities of representation spaces from models trained on different modalities.

Computer Vision Group @ MIT CSAIL

Undergraduate Researcher

August 2021 - December 2022

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 human optical illusions and its alignment with human cognitive concepts.

Theory of Computation Group @ MIT CSAIL

Undergraduate Researcher

June 2021 - August 2021

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

Research Assistant

October 2019 - June 2021

- 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, 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, 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

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

MakerLab *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 *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.

Putnam Practice Group *Member* *September 2020 - June 2021*

- Meet weekly to practice solving mathematical problems from the Putnam competition.

Students Who Code Project *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.