

# Ngan (Elly) Do

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## EDUCATION

**Dickinson College**, Carlisle PA

expected May 2022

*Bachelor of Science*

**Majors:** Computer Science & Mathematics | **Cumulative GPA:** 3.98/4.0

**Related Courses:** Multivariable Calculus; Linear Algebra; Discrete Mathematics; Abstract Algebra; Real Analysis; Artificial Intelligence

**Budapest Semesters in Mathematics (Virtual)**

Spring 2021

**Coursework:** Introduction to Combinatorics | **Grade:** A

## RESEARCH EXPERIENCE

**OurCS at Carnegie Mellon University**, Pittsburgh, PA

Oct 2019

*Research Assistant for Dr. Henny Admoni*

- Worked on a team of five with a researcher on the “Developing Robot Behaviors for Social Communication Support” research project.
- Designed a series of actions using pre-defined algorithms for Kuri, the home robot, which can benefit social communication.

**University of Maryland Department of Computer Science**, College Park, MD

Jun 2021 – Aug 2021

*Student Researcher*

- Collaborated with a graduate student to produce an original research project that focuses on alleviating algorithmic bias, a rising issue in computer systems, in a Graph Neural Network model.
- Presented the project at the CUR’s Research Experiences for Undergraduates (REU) Symposium to faculty members and other students from REU of all disciplines funded by the National Science Foundation at the end of the program.

**Dickinson College Computer Science and Mathematics Department**, Carlisle, PA

Aug 2021 – Present

*Student Researcher*

- Performed a mathematical analysis on a dynamic maze game called *TILT* using the knowledge of combinatorics, graph theory, probability, and Python programming under the supervision of two faculty members.
- Developed a substantial Python program that generates a graph for all the game moves. In the graph, a node represents a game configuration, while an edge represents a transition between game configurations after a move.

## RELATED CAMPUS INVOLVEMENT

**Dickinson College Resident Life & Housing**, Carlisle, PA

Aug 2020 – Present

*Resident Advisor*

- Served as an advisor for 11 to 31 first-year students to connect them to campus resources while studying remotely and in-person and support their transitions to college by helping them tackle any college-related problems.
- Organized three community events each semester to strengthen the connection between residents and develop a strong and supportive community.
- Ensured the safety of the community and reported any issues that affected the residential areas through the on-call system.

**Dickinson College Inclusivity in STEM Committee**, Carlisle, PA

Aug 2021 – Present

*Student Leader*

- Organized events, targeting a diverse group of students, faculty, and staff in the STEM majors, to address challenges and feelings that women and underrepresented minorities across the STEM fields experience.
- Arranged a *Welcome Back Event* that includes a pumpkin-painting activity and table discussions facilitated by on-campus clubs and faculty members (Oct 2021).
- Planned a movie screening *Salam the First Muslim Nobel Laureate*, followed by a discussion in smaller groups (Nov 2021).

## HONORS

*Dean’s List* (all semesters)

*Alpha Lambda Delta Honor Society* (Fall 2018 – Present)

*Sigma Alpha Pi Honor Society* (Spring 2020 – Present)

*Pi Mu Epsilon Honor Society* (Spring 2021 – Present)

*Phi Beta Kappa Honor Society* (Fall 2021 – Present)

## AWARDS

- American Mathematical Society Student Membership Award* Spring 2020
- Received the MAA Student Membership that is awarded annually to a student of the sophomore class for excellence in mathematics.
- David Long Memorial Scholarship for Music Performance Studies* Fall 2020
- Awarded the scholarship to cover the Performance Studies fee for guitar lessons for a semester.
- The Forrest E. Craver Memorial Prize in Mathematics* Spring 2021
- Received the departmental prize that annually honors a student of the junior class that demonstrate excellence in mathematics.
- The 2021 Howard Lane Rubendall Senior Scholarship* Fall 2021
- Awarded the most prestigious honor presented annually by the president of the college to a rising senior who has demonstrated the highest distinction in the areas of leadership, scholarship, and service at Dickinson.
  - Earned a scholarship that is credited to the 2021-22 academic year tuition.

## PRESENTATIONS

- Twoples Mentorship Program (Virtual)** Dec 2021
- The Pólya Theory of Counting and Its Applications, Ngan Do
- Council on Undergraduate Research Symposium (Virtual)** Oct 2021
- Enforcing Individually Fair Graph Neural Networks via a Fairness Graph from Human Judgement, Ngan Do
- Abstract Algebra, Professor Jennifer Schaefer, Dickinson College, Carlisle, PA** May 2021
- The Use of the Group  $\mathbb{Z}_n$  and Matrices in Understanding the Mechanism of Polyalphabetic Cryptosystems, Ngan Do and Manh Vuong

## TEACHING EXPERIENCE

- Dickinson College Computer Science and Mathematics Department, Carlisle, PA** Jan 2020 – May 2021
- Teaching Assistant for Single Variable Calculus (Spring 2020) & Multivariable Calculus (Fall 2020 & Spring 2021)*
- Worked with faculty member to assist students during labs by answering related questions about a variety of mathematics concepts.
  - Assisted professor in preparing the question sets for the lab and homework.
  - Graded student lab work and written homework assignments weekly.
- Dickinson College Computer Science and Mathematics Department, Carlisle, PA** Jan 2020 – Present
- Mathematics & Computer Science Help Room Tutor*
- Offered one-on-one assistance to students who needed help with the assignments from their Mathematics and Computer Science courses.
  - Guided students to improve academic performance and tackle any academic-related issues.

## LEADERSHIP

- Dickinson College Computer Science and Mathematics Department, Carlisle, PA** Sept 2021 – Present
- Majors' Committee Member*
- Nominated by the department faculty members and invited by the department chair to provide feedback on faculty performance and candidates for new faculty positions.
  - Gathered students' feedback on faculty members and other issues going on in the department.

## SKILLS

**Programming Languages:** Java, Python, LaTeX, R

**Technologies:** React.js, REST APIs, Git, PyCharm, MongoDB Compass, Eclipse IDE, IntelliJ IDEA, Visual Code Studio, Adobe Products (Photoshop, After Effects, Illustrator)

**Languages:** English (Fluent), Vietnamese (Native), Chinese (Intermediate), Korean (Beginner)