Esther Cheng

esther.cheng@duke.edu | (267) 885-7068 | linkedin.com/in/estcheng

Education

Duke University, Trinity College of Arts and Sciences, Durham, NC Cumulative GPA: 3.98 *May 2026*
Bachelor of Science in Computer Science & Psychology

- Honors: National Merit Scholarship
- Relevant Courses: Data Structures & Algorithms; Computer Architecture; Fundamentals of Decision Science; Quantitative and Qualitative Methods in User-Centered Research; Technical and Social Analysis of Information and the Internet

Central Bucks High School East, Doylestown, PA GPA: 4.67/4.0; SAT: 1560 *June 2022*

Organizational Leadership

Duke University **Durham, NC**

East Campus Council *August 2022 – May 2023*

- Developed and maintained class-wide traditions to support campus culture
- Corresponded with Duke University's QuadEx Committee to realize effective campus transition

Pegram House Council Vice President *August 2022 – May 2023*

- Chaired meetings with East Campus Housing administration to address dormitory concerns
- Supervised marketing and planning of dorm-wide functions, cultural nights, and sporting events

Craven Quad Council Communications Chair *August 2023 –*

- Managed a ~$40,000 budget for planning/supervision of dorm-wide events for over 500 undergraduate students

Technical Skills & Projects

Skills: Java, HTML, Python, C, MIPS Assembly, JavaScript, CSS

Flowcate **Python, CSS, HTML, JavaScript**

HackDuke Award-Winning Project: Locating Menstrual Product Dispensers on Campus *September 2023*

- Integrated Django with Arduino in order to link dispenser boxes and their locations back to a web server
- Created a map with GoogleMaps API, JavaScript, and Python that updates in real-time as products are dispensed

Markov **Java**

Predictive Text Generative Model *October 2022*

- Simulated a Markov Model using hashing to generate text based off of text file input
- Analyzed natural language processing generative models to critique statistical machine learning and the OpenAI GPT-3

DNALinkStrand **Java**

Simulation of DNA Molecule Restriction Enzyme Cutting *October 2022*

- Modeled recombinant DNA splicing through creation, traversal, and re-organization of a LinkedList
- Benchmarked and analyzed algorithmic runtime efficiency improvements in gene splicing simulations

Autocomplete **Java**

Google Autocomplete Simulator *October 2022*

- Implemented a search autocomplete simulator through Comparators, the binary search algorithm, and a HashMap, optimizing runtime efficiency and memory tradeoffs of different use-cases

Huffman **Java**

Huffman Compressor and Decompressor *November 2022*

- Utilized I/O classes to implement effective and efficient decompression and compression methods
- Generated Huffman trees and codings from trees

Route **Java**

Maps Application Simulator *December 2022*

- Utilized Djikstra's Algorithm to calculate and visualize routes and distances on the US highway network
- Implemented a GraphProcessor to store a graph representation and provide public methods to answer connectivity, distance, and pathfinding queries

Other Hobbies & Interests

Fluent in English, Spanish, & Mandarin
Crocheting, Dance, Canine Behavior