Alexander Zheng

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EDUCATION

M.S. Computer Science ***August 2022 – Present***
University of Illinois-Urbana-Champaign

B.S. Computer Science and Mathematics ***September 2018 – May 2022***
Overall GPA: 3.946/4.000, University of Minnesota – Twin Cities
Honors Program, Dean's List, Gold Scholarship Recipient, Maximillian Lando Scholarship Recipient

RELEVANT COURSEWORK

Machine Learning Fundamentals | Prob-Stat Theory | Algorithms and Data Structures | Program Design & Development | Natural Language Processing | Practice of Database Systems

SKILLS

Languages: Python, Java, C, VBA
Technologies: Linux, Visual Studio Code, PyCharm, IntelliJ, NumPy, Pandas
Other: Git Workflow, Microsoft Suite, Agile methodology

EXPERIENCE

Research Assistant, IDEA Lab with Dr. Hanghang Tong | *August 2022 - Present*

Design Quality Intern, Medtronic | June 2022 – August 2022
- Wrote VBA code to streamline the complaint reduction and prediction Excel worksheet slated for use by over 100 product teams across Medtronic
- Designed a MINITAB macro to automate reliability demonstration test simulations

Software Development Intern, Medtronic | *June 2021 – August 2021*
- Interviewed 17 stakeholders across functions such as Systems, Marketing, and Reliability to determine which user analytics requirements would best inform work-effort allocation
- Designed Power BI dashboard to display stakeholder-required user analytics metrics
- Wrote Python scripts and unit tests to parse user metrics from LINQ Mobile Manager log files in JSON and XML formats

Teaching Assistant (Machine Architecture and Organization) | *January 2020 – December 2020*
- Guided course of over 300 students through C/Assembly language programming and debugging
- Collaborated with the course's TA group to delegate responsibilities such as course grading, office hours, and student questions

LEADERSHIP

Captain, Club Ultimate Frisbee, University of Minnesota | *June 2020 – June 2022*
- Designed and spearheaded a pod system with biweekly small group workouts/drills to hold socially-distanced practices for a team of 30 athletes
- Teach new members throwing mechanics, rules of the game, and sportsmanship

PROJECTS

Honors Thesis: Adversarial Poisson Machine Learning, with Dr. Jeff Calder | *May 2021 – May 2022*
- Thesis analyzed degradation of Dr. Calder's semi-supervised Poisson Learning algorithm for graph data when perturbing the weight matrix using the NumPy and GraphLearning packages
- *Technique*: calculate the matrix gradient with respect to the perturbed weight matrix and **use gradient ascent to maximize the norm of the perturbed solution**. Statistical analysis determined mean loss of accuracy across MNIST, FashionMNIST, and CIFAR-10 datasets