UYEN LE

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EDUCATION

Denison University, *Granville, Ohio* **Aug 2020 – Expected Dec 2023**
Bachelor of Science, Applied Mathematics ***GPA:* 3.98/4.00**
Bachelor of Arts, Computer Science

Teaching Assistantships: Mathematical Foundations of Computer Science (CS234)**,** Introduction to Computer Systems (CS281), Advanced Differential Equations (MATH 434)

PUBLICATIONS

Son Quoc Tran, Phong Nguyen-Thuan Do, **Uyen Le,** and Matt Kretchmar. 2023. The Impacts of Unanswerable Questions on the Robustness of Machine Reading Comprehension Models. In *Proceedings of the 17th Conference of the European Chapter of the Association for Computational Linguistics*, pages 1543–1557, Dubrovnik, Croatia. Association for Computational Linguistics.

RESEARCH EXPERIENCES

Stanford University – Dubra Lab **Palo Alto, CA**
Part-time Research Intern ***Jul 2023 – Present***
Supervisor: Dr. Alfredo Dubra

- Conduct research on **Adaptive Optics Systems** for retinal imaging, which involves real-time adjustments of scanners to rectify optical distortions and software solutions to generate high quality retinal images.
- Develop an automated **image registration algorithm** in Python, integrated with Cupy, to align snapshots of the retinas, reducing the need for manual work and accelerating data processing.

National Center for Supercomputing Application – SciAuth Project **Urbana, IL**
Research Fellow ***Jan 2023 – Apr 2023***
Mentor: Dr. Derek Weitzel

- Collaborated on a student-led research project in **cybersecurity**, built on prior work by the **NSF SciTokens** project.
- Built a new module for the SciTokens library based on Python JSON Web Tokens to allow users to generate sample tokens with custom payloads from the command-line, enabling testing and experimentation in **OAuth2 workflows**.
- Incorporated Flask frameworks to demonstrate web token authorization within the SciTokens library.

Denison University – Natural Language Processing Lab **Granville, OH**
Anderson Summer Research Scholar ***Feb 2022 – Aug 2022***
Supervisor: Dr. Matt Kretchmar

- Fine-tuned three variants of **BERT** on SQuAD (Stanford Question Answering Dataset) and conducted extensive experiments to evaluate the robustness of current **machine reading comprehension models**.
- Identified the advantages of fine-tuning models on additional unanswerable questions in improving robustness against adversarial attacks, compared to those fine-tuned solely on answerable questions.
- Conducted extensive literature reviews, synthesized research findings to support key arguments, and actively participated in manuscript drafting of the publication.

CONFERENCE PRESENTATIONS

Uyen Le. 2023. The Impacts of Unanswerable Questions on the Robustness of Machine Reading Comprehension Models. Poster presented at *Nebraska Conference for Undergraduate Women in Mathematics.* [Poster]

Uyen Le. 2023. A Survey Data Consolidation and Reporting System. Presented at *Ohio Association for Institutional Research and Planning*. [Presentation]

INDUSTRY EXPERIENCES

NCR Corporation – Payments and Networks **Atlanta, Georgia**
Software Engineer Intern ***May 2023 – Aug 2023***

- Led the migration effort of NCR Payments Solutions built in Go and C++ to Azure Kubernetes Service, increasing the system scalability by 2x and achieving availability rate of 99.95%.
- Incorporated Helm and Argo CD to drive continuous delivery, reducing build time by 45% and errors by 75%.
- Streamlined the development process by creating Bash scripts to automate local dev environment setup.

Denison University – Institutional Analytics Hub **Granville, OH**
Research Assistant Intern ***Sep 2022 – May 2023***

- Compiled survey reports, data cleanup, and architected a scalable relational database to house institutional surveys.
- Built a GUI for an automated data manipulation and dashboard visualization pipeline with Python and Tableau.
- Collaborated with cross-functional teams to develop data-driven solutions for institutional successes.

PERSONAL PROJECTS

spec.boots: Bootstrapping Spectral Density [Link]

- Investigated bootstrap methods to obtain a reliable estimation of time series spectral density without dependence on the sample-level periodograms and assumptions about data distribution.
- Implemented and distributed an R package to bootstrap the spectral density of a time series object by resampling the original periodogram, with enhanced accuracy and visual clarity over R's mvspec spectral estimation method.

AWARDS & HONORS

- Grace Hopper Scholar by AnitaB.org
- SciAuth Cybersecurity Research Fellowship at National Center for Supercomputing Applications [Link]
- Texas State Summer School in Mathematical Physics (2023) [Link]
- Sigma Xi, The Scientific Research Honor Society
- Upsilon Pi Epsilon International Honor Society
- Alice Hutchinson Lytle Award (2023), *awarded to the senior female with highest cumulative GPA in Math & CS*
- Daniel Donald Bonar Mathematics and Computer Science Award (2023), *for engagement in department initiatives*
- Chosaburo Kato Memorial Award (2022), *awarded to the most promising junior major in the department*
- Forbes B. Wiley Award (2021 & 2022), *to sophomores and juniors for Excellence in Math & CS*
- 1st Place in Four College Math Contest (2022) [Link]

LEADERSHIP & SERVICE

Denison University – University Honor Committee **Granville, OH**
Academic Integrity Board Member ***Sep 2022 – Present***

- Participate in hearings related to academic integrity violations and make recommendations for suitable actions.
- Engage in the academic integrity code revision project that meets biweekly to ensure alignment with university policies and values.
- Facilitate monthly discussions with students and faculty aimed at promoting awareness of academic integrity and fostering a culture of continuous learning on campus.

Denison University – Student Alumni Council **Granville, OH**
Fundraising and Stewardship Member ***Jan 2023 – May 2023***

- Coordinate with the Office of Institutional Advancement to plan and execute fundraising campaigns for the university, resulting in a $7.8B donation record and the establishment of 50 new funds to support financial aid.
- Represent the student body at alumni events, including homecoming and reunion weekends, to foster student-alumni relationships, provide campus updates, and solicit donations from over 8,000 total donors.