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HUY ANH NGUYEN

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Google Scholar

EDUCATION

Pittsburgh, PA	**Carnegie Mellon University**	**08/2018 - 02/2024**

- **PhD in Human-Computer Interaction,** Human-Computer Interaction Institute, School of Computer Science.
- **M.S. in Human-Computer Interaction,** Human-Computer Interaction Institute (2018-2022).
- **Research Areas:** learning analytics, data science education, computational social science.
- **Advisors:** Dr. Bruce M. McLaren, Dr. John Stamper.

Easton, PA	**Lafayette College**	**08/2014 - 05/2018**

- **Bachelor of Science in Computer Science and Minor in Mathematics**. Major GPA: 3.93.
- **Honors Thesis**: Building Student Models in a Non-scaffolded Testing Environment.
- **Advisor**: Dr. Chun Wai Liew.

WORK EXPERIENCE

Applied Scientist Intern	**Amazon - Alexa Automotive**	**05/2022 - 08/2022**

- Refined the grammar for capturing Alexa queries that express the intent to pay for gas (PfG). Reduced the grammar length by 25% and added support for new gas brands and fuel types.
- Led the transition of Alexa's model architecture for capturing PfG queries from linear classifiers to BERT, reducing semantic error rates by 60%.
- Composed new grammar rules and created synthetic training data to reduce false positives in the daily PfG traffic by 90%.

Research Intern	**Microsoft Research - Computational Social Science**	**05/2021 - 08/2021**

- Conducted studies with 2000+ participants to investigate the trade-offs between numerical precision and cognitive performance.
- Performed data visualizations and statistical testings to identify the cognitive benefits of lowering numerical precision to improve recall and estimation accuracy in scientific and media communications.
- Published a full research paper at the leading conference in human-computer interaction, ACM CHI. First-round acceptance rate: 324/2597 (12.5%).

Course Manager	**Carnegie Mellon University**	**03/2020 - 08/2023**

- Led a team of 12 masters students in developing 7 coding projects and automated grader systems for a graduate-level data science course from the ground up.
- Responded to questions from 700 students and supervised the teaching staff over 10 semesters. Received consistently high course evaluation ratings (4.3+ out of 5) from students.
- Led research on promoting data science learning at scale. Topics include: student behavior analysis from log data, automated question generation from learning materials, and automated data science code evaluation.

Graduate Student Researcher	**Carnegie Mellon University**	**08/2018 - 02/2024**

- Led the research and development of *Decimal Point*, a game that teaches decimal numbers to middle schoolers.
- Conducted 9 experiments of the game on 1,700+ students to investigate student agency, gender effects, self-explanation and help-seeking behaviors.
- Conducted statistical testings and built predictive models to identify factors that impact players' learning and enjoyment. Published 28 conference papers and 3 journal papers.

Awards and Honors

- **Best Paper Award:** International Conference on Learning at Scale (2022), European Conference on Technology Enhanced Learning (2023).
- **MCDS Student Teaching Award (2022)**: Awarded to the most outstanding student instructor for courses taught in the Masters of Computational Data Science program at Carnegie Mellon University.
- **Best Paper Award Nomination:** International Conference on Learning Analytics & Knowledge (2020).
- **Doctoral Consortium Fellowship (2019)**: International Conference on Educational Data Mining
- **Honor Societies (2017)**: Upsilon Pi Epsilon (Computer Science), Pi Mu Epsilon (Mathematics).
- **ACM International Collegiate Programming Contest (2016)**: Ranked second among teams in the Mid-Atlantic region at Wilkes University.
- **Putnam Competition (2014)**: Ranked 716/4320 in the nationwide undergraduate math competition.

Skills

- **Languages:** Python, Bash, HTML + CSS + JavaScript ES6, Java, SQL, R, LaTeX.
- **Frameworks & Tools:** NumPy, Pandas, PyTorch, Spark, Scikit-learn, Docker, Azure, Jupyter.
- **Research Methods**: Statistics, Experimental Studies, A/B Testing, Data Mining.

Selected Publications

P5   Huy A. Nguyen, Hayden Stec, Xinying Hou, Sarah Di, Bruce M. McLaren (2023). Evaluating ChatGPT's Decimal Skills and Feedback Generation to Students' Self-explanations in a Digital Learning Game. In *Proceedings of the European Conference on Technology Enhanced Learning*, pp. 278-293.

P4   Huy A. Nguyen, Xinying Hou, J. Elizabeth Richey, Bruce M. McLaren (2022). The Impact of Gender in Learning with Games: A Consistent Effect in a Math Learning Game. *International Journal of Game-Based Learning (IJGBL), 12*(1), 1-29.

P3   Huy A. Nguyen**,** Shravya Bhat, Steven Moore, Norman Bier, John Stamper (2022). Towards Generalized Methods for Automatic Question Generation in Educational Domains. In *Proceedings of the European Conference on Technology Enhanced Learning*, pp. 272-284.

P2   Huy A. Nguyen, Jake M. Hofman, Daniel G. Goldstein (2022). Round Numbers Can Sharpen Cognition. In *Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems*, pp. 1–15.

P1   Huy A. Nguyen, Michelle Lim, Steven Moore, Majd Sakr, Eric Nyberg, John Stamper (2021). Exploring Metrics for the Analysis of Code Submissions in an Introductory Data Science Course. In *Proceedings of the 11th International Conference on Learning Analytics & Knowledge*, pp. 632–638.