John Nguyen

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Work Experience

Software Engineer, John Hopkins University Applied Physics Lab   July 2021 - Current
- Developed a DIS-integrated radar simulator in Python to evaluate features used in upcoming flight tests.
- Simulated maritime conflict scenarios in the INDPACOM region with considerations for modern recon.
- Implemented reference point sharing over a network between different mission control software instances utilizing C++ and Java.

Research Assistant, University of Minnesota CEGE Department   May 2020 - December 2020
- Developed an autonomous vehicle driving simulation to utilize reinforcement learning techniques.
- Analyzed the decision making and driving behavior of data-driven car following models.
- Combined driving data from multiple data sources into a master database.

Undergraduate Teaching Assistant, University of Minnesota Math Department   August 2018 - May 2020
- Led a weekly discussion session with 31 students focusing on various precalculus topics.
- Collaborated with faculty, graduate students and undergraduate teaching assistants at weekly meetings to develop short term lesson plans, and prepare for future exams.
- Helped transition classes to online during the start of COVID-19.
- Seasonal job during the semester.

Undergraduate Researcher, University of Arizona   June 2019 - August 2019
- Implemented algorithms to analyze real time data in decision making utilizing sensor fusion (lidar, radar, camera, etc).
- Led a team of three undergraduates to research traffic dynamics with a full sized autonomous vehicle.
- Developed software integrating reinforcement learning methods with custom driving simulators.

Undergraduate Research Assistant, UMN Computer Science Department   June 2018 - August 2018
- Implemented parameter tuning algorithms to optimize performance of a time series classification algorithm called FLAG.
- Modified FLAG to incorporate a novel learned distance metric and updated legacy C code.
- Developed figures to better explain methods and to visualize data in an upcoming paper.

Education

Bachelors of Science in Mathematics   May 2020
- University of Minnesota Twin-Cities, Minneapolis, MN
- Cumulative GPA: 3.43

Bachelors of Science in Computer Science, Emphasis in Artificial Intelligence   May 2020
- University of Minnesota Twin-Cities, Minneapolis, MN

Associate Arts with Emphasis in Mathematics   May 2016
- Normandale Community College, Bloomington, MN
- Cumulative GPA: 3.76

High School Diploma   June 2016
- Richfield High School, Richfield, MN
- Cumulative GPA: 3.80

Publications
- John Nguyen. Nonparametric Car Following Models. In *AAAI Undergraduate Consortium*, **AAAI**, 2020
- John Nguyen, Aileen Zebrowski. Adapting the Budyko Model to Analyze Permafrost Recession and Potential for Carbon Feedback. *SIAM Undergraduate Research Online*, **SIURO**, 2021.
- John Nguyen, Raphael Stern. Modeling Oscillatory Car Following Behavior Using Deep Reinforcement Learning Based Car Following Methods. In *IEEE Conference on Models and Technologies for Intelligent Transportation Systems*, **IEEE MT-ITS**, 2021.

Skills
- Proficient with C++, Python, Java, C and Typescript.
- Experience working Pytorch, Tensorflow, gRPC and Protocol Buffers.
- Multitasking and time management skills to be productive on several different projects.