Minh-Duc (Aaron) Nguyen

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EDUCATION

Miami University, Oxford, OH (Cumulative GPA: 3.75/ Major GPA: 3.84) May 2022 (expected)
Bachelor of Science in Computer Science | Major: Computer Science, Minor: Statistics

RELEVANT COURSES

Artificial Intelligence, Machine Learning, Time Series Analysis, Probability, Algorithm analysis, Linear Algebra, Calculus (I and II), Discreet Math, Data Structure, Object-Oriented Programming, System.

RESEARCH EXPERIENCE

Research Assistant for Dr. Ran Zhang
Department of Electrical and Computer Engineering, Oxford, OH August 2020 - now
Project: Joint Trajectory and Charging Control for Sustainable UAV-based Communication Networks

- Apply Deep Deterministic Policy Gradient to control Unmanned Aerial Vehicles' movements in a Centralized fashion.
- Propose Multi-Agent Branching Deep Q-learning to learn UAVs' Positions and Charging Policy.
- Create a Python Simulation that returns Feedback from Ground-based Users for the UAV System.
- Implement Parallel Computing with Pytorch for Decentralized Training and Execution.

Research Assistant for Dr. Phillipe Giabbanelli
Data Analytics for Complex Human Behaviors Lab, Oxford, OH May 2020 – August 2020
Project: Understanding Suicidal Behaviors through Machine Learning, Agent-based Modeling and Simulation

- Constructed Classified Models with 90% Accuracy for Suicide Attempts and Ideations.
- Built an Agent-based Model Simulation to predict Social Impact of some events on people's Suicidal Behavior.
- Created Causal Graphs contained up to 361 Concepts and 946 Interrelationships leading to Suicide.

PUBLICATIONS

- **Mapping the Complexity of Suicide by Combining Participatory Modeling and Network Science**
  Phillipe J. Giabbanelli, Michael C. Galgoczy, ***Duc M. Nguyen***, Romain Foy, Ketra L. Rice, Nisha Nataraj, Margaret M. Brown, Christopher R. Harper
  IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (Accepted), 2021
- ***Responsive Regulation of Dynamic UAV Communication Networks Based on Deep Reinforcement Learning***
  R. Zhang, ***Duc M. Nguyen***, M. Wang, L. X. Cai, X. Shen
  arXiv preprint arXiv:2108.11012, 2021 [arxiv]

PROJECTS

Department of Electrical and Computer Engineering, Oxford, OH August 2021 - now
Project: Self-driving Car on Miami University's Sidewalks

- Develop Computer Vision algorithms to detect driving lanes, traffic lights and pedestrians from Raspberry Pi camera.
- Build an autonomous agent to control the steering wheel and the acceleration of the vehicle.

TEACHING ACTIVITIES

***STEAM For Vietnam* (https://www.steamforvietnam.org/)** September 2020 – now

- **CS 201: Introduction to Robot Design and Programming with VEX IQ**
  - Introduce VexIQ Kit and how to control Robots with Python.
  - Work with lecturers to develop course's material.
- **CS 001: Introduction to Programming and Logical Thinking with Scratch**
  - Teach block-based language Scratch to Vietnamese children around the world via online learning.
  - Grade homework assignments and provide answers for questions during online classes.

Department of Computer Science, Miami University, *Oxford, OH* August 2019 – December 2019

- Teaching assistant for professor Amjad in *CSE 174 Introduction to Programming and Problem Solving with Java*.
- Held weekly lab sessions to assist 30 students to learn programming with Java.

AWARDS /ACHIEVEMENTS

Miami University's Undergraduate Summer Scholars Summer 2021
Winner of Miami University's first Blockchain Hackathon Spring 2021
Miami RedHawk Excellence Scholarship, Miami International Education Scholarship Fall 2018 – Spring 2022
Miami University Dean's List Honoree Spring 2019, Fall 2019, Fall 2020, Spring 2021

SKILLS

Programming languages: C++, Java, Javascript, Python.
Machine Learning libraries/frameworks: Pytorch, TensorFlow, OpenCV, Scikit-learn.
Other tools: Cluster Computing, Git, Matplotlib, NumPy, Pandas, Ray.