Ngoc Nhu Hoang

Tel (VN): +84 (0)79 558 7324 | ngoc.hoang@nyu.edu | linkedin.com/in/ngocnhoang | github.com/nhungoc1508 |
nhungoc1508.github.io

EDUCATION

New York University Abu Dhabi　　　　　　　　　　　　　Abu Dhabi, United Arab Emirates
Bachelor of Science　　　　　　　　　　　　　　　　　　　　　　08/2019 – 05/2023

- Major in Computer Science, minors in Applied Mathematics, Interactive Media.
- GPA: 3.906/4.0
- Named University Honors Scholar and awarded the NYU Founders' Day Award for top-ranking Baccalaureate candidates and graduates.
- Relevant coursework: Discrete Math, Data Structures, Algorithms, Computer Systems Organization, Software Engineering, Operating Systems, Introduction to Machine Learning, Computational Social Science, Multivariable Calculus, Linear Algebra, Probability and Statistics.
- Bachelor thesis: *Anomaly Detection Using AutoEncoders: the Advanced Persistent Threats Case.*
  - Researched and implemented AutoEncoder-based methods to detect advanced persistent threats by reconstructing system-level provenance data.
  - Developed models highlighting anomalous system activities within highly imbalanced data, showcasing strong capabilities to detect anomalies outperforming various baseline algorithms.

New York University　　　　　　　　　　　　　　　　　　　New York, United States
Study away program　　　　　　　　　　　　　　　　　　　　　08/2021 – 12/2021

- Coursework: Artificial Intelligence, Natural Language Processing, Computer Networks, Processing Big Data for Analytics Applications.

RESEARCH EXPERIENCE

Research Assistant　　　　　　　　　　　　　　　　　　　　　05/2023 – 07/2023
Center for Quantum and Topological Systems, NYU Abu Dhabi　　　Abu Dhabi, United Arab Emirates

- Conducted research and preliminary experiments in formalizing braid groups as automorphisms of free groups using the dependently typed functional programming language Agda.

Research Assistant　　　　　　　　　　　　　　　　　　　　　06/2022 – 08/2022
Department of Civil and Urban Engineering, NYU Tandon　　　　　New York City, United States

- Conducted analysis using BigQuery to process and validate big datasets (containing over 200 million records), visualized findings with various maps and data dashboards.
- Optimized an algorithm for the capacitated user equilibrium problem by 90%, reducing runtime from 24 to 1.5 minutes by conducting extensive code review to identify bottlenecks and applying vectorization.
- Designed, ran, analyzed a program running genetic algorithm for parameter estimation for project on stochastic user equilibrium.

Research Assistant　　　　　　　　　　　　　　　　　　　　　05/2021 – 07/2021
Center for Global Sea Level Change, NYU Abu Dhabi　　　　　　　Abu Dhabi, United Arab Emirates

- Implemented and evaluated a probabilistic model for predicting long-term shoreline changes given geomorphological and geologic settings under different sea level rise scenarios.
- Conducted processing, interpolation, projection on geospatial datasets of Abu Dhabi shoreline.
- Wrote customized Python scripts for maps intersection and model prediction that shortened run time from over 6 hours to under 20 minutes.

Professional Experience

Software Engineer   Since 10/2023
LG Electronics Development Vietnam   Da Nang City, Vietnam

- Researching and developing automotive connectivity solutions for in-vehicle infortainment (IVI) systems e.g. human machine interface (HMI) applications, frameworks, protocols to interface with middleware, and modules for over-the-air software update.

Application Security Intern   02/2023 – 05/2023
Wio Bank P.J.S.C.   Abu Dhabi, United Arab Emirates

- Conducted static analysis of Android and iOS apps to ensure security standards and detect vulnerabilities.

Publications

Chow, Joseph Y J, Xiyuan Ren, and Ngoc Hoang. *NY Statewide Behavioral Equity Impact Decision Support Tool with Replica*, Connected Communities for Smart Mobility Toward Accessible and Resilient Transportation for Equitably Reducing Congestion (C2SMARTER) Tier-1 University Transportation Center (UTC), 1 July 2023, rosap.ntl.bts.gov/view/dot/72373.

Hoang, Ngoc Nhu. *A Vietnamese Named Entity Recognition System for COVID-19 Articles*. 2022 IEEE MIT Undergraduate Research Technology Conference (URTC), IEEE, 30 Sept. 2022. DOI: 10.1109/URTC56832.2022.10002170.

Conference Presentation

A Vietnamese Named Entity Recognition System for COVID-19 Articles, 2022 IEEE MIT Undergraduate Research Technology Conference, Cambridge, MA, United States (presented virtually). October 2022 (paper presentation).

Competition

NYU Abu Dhabi Hackathon   04/2022
qSa'id - Quantum-ML-Assisted Diagnostic Treatment Access Platform for Autism

- Created for NYUAD Hackathon for Social Good in the Arab World 2022 focusing on Quantum Computing - Team won Best social good applied to the region.
- Built a screening tool for Autistic Spectrum Disorder using neural network; achieved 95.1% accuracy on test data.
- Built a demo platform using Flask for back-end and Bootstrap for front-end design.

University Service

Computer Science Peer Tutor   02/2022 – 05/2023
Unix Lab, NYU Abu Dhabi   Abu Dhabi, United Arab Emirates

- Assisted 10+ students every week with Computer Science and programming-related coursework and projects.

Global Education Officer   02/2022 – 05/2023
Office of Global Education, NYU Abu Dhabi   Abu Dhabi, United Arab Emirates

- Advised first-year students on global education policies and opportunities related to semester and short-term study away program.

Skills

Programming languages: Python, C, C++, JavaScript, Swift

Web development: HTML, CSS, Express, NodeJS, React, Flask

Other software proficiency: Figma, Adobe Photoshop, DaVinci Resolve

Languages: Vietnamese (native), English (fluent)