Manh Hai Hoang

haicanberra.github.io | haicanberra@gmail.com | 587 921 1084 | Edmonton, AB

WORK EXPERIENCE

Hanoi University of Science and Technology   **September 2023 - Present**

Research Assistant

- Assisted in the development and testing of a chaos-based image encryption and decryption system in Python using fxpmath library.
- Experimented with batch image encryption in Python using multithreading, exploring its limitations and potentials for optimization.
- Investigated the impact of varying initial values in the logistic map on the encrypted image data and contributed to discussions on parameter selection for enhanced security.

NeurAlbertaTech   **July 2022 - August 2022**

Event Assistant

- Built a comprehensive spreadsheet of 100+ contact entries of media, newsletters and professors to prepare for targeted outreach.
- Contributed to a successful outreach campaign by drafting and personalizing 50+ outreach emails, yielding a response rate exceeding 75%.
- Supported on-site participant registration and timely distribution of event exclusive merchandise, maintaining seamless coordination.

Alberta Beer Festivals   **June 2022 - June 2022**

Event Assistant

- Enriched the event experience by distributing 400+ promotional merchandise and informational brochures to attendees.
- Provided on-site support to 20+ attendees throughout the event and proactively addressing concerns, ensuring an enjoyable event for participants.
- Enhanced event security and access control by verifying credentials and preparing 200 member badges prior to the event.

SKILLS

- **Languages:** Python, SQL, C, C++.
- **Tools:** Linux, Git, MySQL, Tableau, Pytorch, Django, Microsoft Office and Excel, Microsoft Teams.

EDUCATION

University of Alberta   **Graduated June 2023**

Bachelor of Science with Specialization in Computer Science

- Awards Dean's Honor Roll (2019 - 2023)
- Undergraduate Scholarship (2020)
- International Student Scholarship (2019 - 2021).
- Relevant coursework: *Algorithms, Computer Organization and Architecture, Machine Learning, Database Management, Software Engineering, Reinforcement Learning, Intelligent Systems, Operating System, GPU Programming.*

PROJECTS

Image Captioning Model with Deep Learning

- Developed and trained a PyTorch image captioning model utilizing Inceptionv3 as a CNN backbone and a LSTM network for sequence generation.
- Improved data loading speed by 70% through hyperparameter optimization and GPU utilized preprocessing.
- Achieved an average METEOR Score of 0.245 and an average BLEU Score of 0.022 on a test set of 1000 random images.

Interactive Tourism Map with Routing Functionality

- Developed a Django web application enabling city exploration of over 10 types of tourist attractions and 30 categories of amenities in approximately 500 cities.
- Optimized routes between user-selected point of interest waypoints by utilizing OpenRouteService API, reducing travel time by an average of 25%.
- Integrated Nominatim and Overpass API for geocoding and mapping, allowing real-time filtering and visualization on an interactive Folium map.