

Pat Tran

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EDUCATION

Georgia Institute of Technology | Atlanta, GA

January 2021 – December 2023

- Bachelor of Science Computer Science.
- **Threads:** Information Internetworks and People.
- **GPA:** 3.80/4.0
- **Relevant Courses:** Object-Oriented Design (Java), Data Structures and Algorithms (Java), System-Level Programming (Assembly & C), Database System (SQL).

PROJECTS

Game Launcher [code]

May 2022 – August 2022

Individual Project

A game launcher with an instant image translation feature to understand the in-game tasks and rewards.

- Design login and game windows with custom buttons in the title bar using the .NET Framework.
- Utilize Tesseract OCR Engine to automatically solve the Captcha image to login with an accuracy rate of 86%.
- Create a custom Snipping Tool to capture a selected part of the screen and utilizes an ONNX formatted pre-trained model that was trained to recognize Chinese characters to extract text from the captured image.
- Implement an algorithm to bulk translate text using the free translation APIs from the GTranslate package.
- Customize the game perspective and zoom level by injecting code into the SWF game file using ActionScript.

ITS-Chatbot v2.0 [code]

January 2021 – May 2022

Team Member and Team Lead

Continuation of the VIP-ITS Chatbot project with new approaches.

- Create REST APIs with Flask to integrate with other projects and develop an automated test script using PyTest and Flask-Testing to validate the JSON responses from the APIs.
- Implement the LDA and CorEx topic models to find latent topics from all textbook sections, group them according to their topics, and predict which section(s) are relevant to the user query.
- Lead a team of 3 to implement the document retrieval algorithm called the Okapi BM25 algorithm to retrieve the top relevant documents to improve processing speed by 40% while retaining the same accuracy score.
- Lead a team of 8 to fine-tune the pre-trained Transformers model to increase its accuracy by 15% and explore another approach using the Weaviate Vector Search Engine instead of the Transformers-based approach to answer the user query.

Drone Grocery Delivery [code]

January 2021 – May 2021

Team Member

Design and implement an online store system using the classical methodology for relational database development.

- Design an Entity Relationship Diagram that represents all functionalities of the application.
- Create MySQL stored procedures from the ER Diagram to insert, update, or delete the data inside of the appropriate table(s). Host it on AWS Relational Database Service for ease of accessibility.
- Utilize JavaFX to design the software interface and the MySQL Connector/J driver to connect the application to the Amazon database.

LEADERSHIP

Viet Hong Vietnamese School | Norcross, GA

July 2020 – May 2021

Lead IT

- Lead the weekly meetings to instruct the teachers through the necessary steps for effective online teaching and parent communication.
- Evaluate IT problems with the administrators and formulate the best solution.
- Collaborate with the IT team to create a step-by-step guide in Vietnamese to use software such as Google Meet, Google Classroom, and Google Jamboard.

SKILLS

- **Programming languages:** Java, Python, C, C#, SQL, HTML, CSS, Javascript, ActionScript
- **Library & Frameworks:** Pandas, NumPy, SciPy, scikit-learn, PyTorch, TensorFlow, NLTK, Spacy, Gensim, Flask, BeautifulSoup, JavaFX, AWS, JUnit, PyUnit, Rest APIs, .NET Framework, ReactJS