Dzung Nguyen

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Education

University of Pennsylvania: School of Engineering and Applied Sciences — Graduating May 2021

BSE in Computer and Information Science, Minor in Mathematics

Selected Coursework: Data Structures and Algorithms (Java), Programming Languages (Java, OCaml), Computer Architecture (C), Computer Graphics (C++), Big Data Analytics (Python, SQL, MapReduce, Spark, Keras), Computational Linear Algebra.

Jack Kent Cooke Merit Scholarship Recipient

One of the most competitive scholarships in the nation with a 1.6% acceptance rate, covering $40k in costs annually over 4 years.

Rewriting the Code Undergraduate Fellow

Skills

Languages: Python, C++, JavaScript, HTML, CSS, Java, MATLAB, C#.
Tools and Frameworks: React, Django, Pandas, Node, Docker, AWS, PostgreSQL, Keras, OpenGL, Git, Jira.

Experience

***Teaching Assistant,* University of Pennsylvania – CIS240** | Philadelphia, PA — May 2019 - Present

- Hold weekly office hours and grade exams for computer architecture course **(C, Assembly)** with over 200 students enrolled per semester.

***Software Engineering Intern*, CBRE Build** | Seattle, WA — June – August 2019

- Optimized UI performance for Deal IQ by migrating frontend features from **Angular** to **React,** utilized by almost 3000 brokers to manage deal financials throughout the country.
- Reduced runtime by 70% for **Extract-Transform-Load** pipeline to process real estate transactions with $6 billion gross revenue/year, used in products across 3 teams with **multiprocessing**, **Django**, **PostgreSQL**, **ElasticSearch**, **Docker**, **AWS Lambda**.
- Integrated Deal IQ data with CBRE's meta database for research and development with **GraphQL**.

***Research Assistant,* Perelman School of Medicine** | Philadelphia, PA — December 2018 – June 2019

- Created a new procedure to quickly generate binary masks for cardiac wave scans using **OpenCV** and **MATLAB**.
- Implemented a U-Net model in **Keras,** trained on **AWS** to segment aortic waves from overlapping waves with 82% accuracy. To be used as a plugin in a software helping physicians to efficiently analyze catheterization waveform scans.

***Software Engineering Intern,* Ami Artificial Intelligence** | Ho Chi Minh City, Vietnam — May – July 2018

- Worked closely with company's CTO to conduct research on best tools and practices in **REST APIs, microservices**, app management (**Docker**, **Azure**) and wrote reports to software team.
- Improved production efficiency by 12% for 30+ engineers measured by weekly tasks accomplished by building a chatbot with Microsoft Bot Framework SDK for **Node**.

Projects

PennCourseRec | **NLP**, **Django**, **Bootstrap** course recommendation engine — May 2019 – Present

- Developed **NLP** model combining **Doc2Vec** and **Latent Semantic Analysis** to create corpus of 1000+ courses offered at Penn.
- Delivered to user the most relevant courses based on freeform input description with **cosine similarity**.

Monte Carlo Path Tracer | A **C++** and **OpenGL** physics-based renderer — February 2019 - Present

- Reduced render time by 50+% with optimization techniques such as rapid recursive search in a **k-dimensional tree**.
- Increased scene complexity via homogenous particle rendering (fog), signed-distance functions, and depth of field.

WeathAR | PennApps XVIII Hackathon **Android** application — September 2018

- Collaborated with team of 4 to build an Android app to minimize human loss from weather disasters in under 48-hour time.
- Programmed **C#** scripts to map weather data to 3D weather assets in **Unity** to display on mobile app.

Leadership and Involvements

Hack4Impact | Software Engineer — September 2019 – Present

Design and implement open-source software for nonprofit organizations in scrum teams.

SIGGRAPH – Special Interest Group on Computer Graphics | External Relations Chair — September 2018 – Present

Plan networking events with other local chapters, organize alumni panels, run skill-sharing workshops for local UPenn chapter.