

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: Digital Media Design, Minor in Mathematics

Selected Coursework: Data Structures and Algorithms (Java), Introduction to Computer Graphics (C++, OpenGL), Physically-based Rendering (C++/OpenGL), Big Data Analytics (Python, SQL, MapReduce, Sparks), GPU Programming (C++, CUDA).

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: C++, Python, Java, JavaScript, HTML, CSS, MATLAB, C#.

Tools and Frameworks: OpenGL, Django, Pandas, React, Node, Docker, AWS, Azure, PostgreSQL, Keras, OpenCV.

Experience

Full-stack Software Engineering Intern, CBRE Build | Seattle, WA

June 2019 - Present

- Rebuilt **Extract-Transform-Load** pipeline for processing real estate transactions with \$6 billion gross revenue/year, utilized in applications across 3 teams. Technologies include **Python's multiprocessing, Django, PostgreSQL, Elasticsearch, Docker, AWS**.
- Optimized Deal IQ's UI performance by migrating frontend features from **Angular** to **React**.
- Used **GraphQL** to integrate Deal IQ data with CBRE's meta database for research and development.
- Participated in **Agile** development with **Kaban** workflow, **Jira**, and version control and code review via **Gitlab**.

Teaching Assistant, University of Pennsylvania | Philadelphia, PA

May 2019 - Present

- Hold weekly office hours and grade exams for CIS240, computer architecture course (**C, Assembly**) with over 100 students enrolled per semester.

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** and trained with **AWS GPU Instance** 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 **NodeJS**.

Projects

Monte Carlo Path Tracer | A C++ and OpenGL physically-based renderer

February 2019 - Present

- Reduced render time by over 50% with optimization techniques such as early termination with **Russian Roulette** and **k-d tree**.
- Increased scene complexity via homogenous particle rendering (fog), signed-distance functions, and depth of field.

PennCourseRec | An nlp web application course recommender

May 2019 – Present

- Created **NLP** model in **Python** with sentiment analysis to return accurate results based on user's ideal course description.
- Designed and implemented data models in **Django** to store 1500 course objects in **PostgreSQL**.

WeathAR | PennApps XVIII Hackathon project

September 2018

- Collaborated with team of 4 to create 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

Penn Women in Computer Science | Mentor

September 2018 – Present

Mentor incoming freshman students on course selection, extracurriculars, and coursework management.

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.