

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), Programming Languages (Java, OCaml), Computer Architecture (C), Computer Graphics (C++), GPU Programming (C++, CUDA, Vulkan), Big Data Analytics (Python, SQL, MapReduce, Sparks, Keras).

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

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 200 students enrolled per semester.

Software Engineering Intern, CBRE Build | Seattle, WA

June – August 2019

- Optimized Deal IQ (financial management app for brokers) UI performance by migrating frontend features from **Angular** to **React**.
- 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**.
- Participated in **Agile** development with **Kaban** workflow, **Jira**, and version control and code review via **Gitlab**.

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.
- Recommended most relevant courses based on user's freeform 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 early termination with **Russian Roulette** and **k-d 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

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.