**Dzung Nguyen**

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Description automatically generated]() [dzungng@seas.upenn.edu](mailto:dzungng@seas.upenn.edu)

**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 EngineeringIntern, CBRE Build** |Seattle, WAJune 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.