**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, 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, WAJune – 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.