# DANIEL HUYNH

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## EDUCATION

**University of Virginia,** School of Engineering and Applied Sciences, Charlottesville, VA ***August 2021 - May 2024***
Bachelor of Science in Computer Science **GPA**: 3.98 / 4.0

- Coursework: Machine Learning, Artificial Intelligence, Software Development, Web Apps, Computer Systems, Algorithms

## SKILLS

- Languages/Frameworks: Java, Python, C, PHP, Typescript, JavaScript, SQL, C++, C#, R; Angular, Django, Bootstrap, Tailwind
- Software: Git, Docker, AWS (EC2, RDS, Lambda), Arduino IDE, MySQL, PostgreSQL, Heroku, Autodesk, Gradle, MATLAB
- Systems: Windows, MacOS, UNIX, LINUX
- Libraries: React, TensorFlow, Flask, scikit-learn, PyTorch, JavaFX, NLTK, JUnit, jQuery, BeautifulSoup, Matplotlib, pandas

## EXPERIENCE

***Application Engineering Intern,* Ansys,** Exton, PA ***May 2023 – August 2023***

- Solely responsible for building software to simulate & calculate large-scale communications data from satellite constellations to ground antennas. *Simulation adopted by a major telecommunications company and integrated in next version of STK release.*
- Developed software to seamlessly convert between LK files into FFD antenna files, ensuring compatibility with STK software, *integrated in next release***.** Researched 3D file format types and file conversion for project.
- Designed and built user interfaces (C#), automation scripts (Python), and integration code to modify Ansys STK software for customer applications, specifically those in aerospace engineering research, design, and mission planning.

***Research Assistant,* Floodwatch Project at University of Virginia (UVA)** ***May 2023 - Present***

- *Lead researcher of LiDAR sensors* used to map flooding in cities, solely build novel sensor transmitting over LoRaWAN network. Program sensor device with Arduino, using C/C++, with accuracy up to 7 meters. Funded by *National Science Foundation.*
- Build and maintain pipeline data collection from IOT devices to gateway to project databases hosted on AWS EC2/S3 as part of Hardware team. Utilized AWS Lambda and AWS RDS for pipeline. Experienced in embedded systems.

***Researcher and Subteam Lead,* CliniVision Project at UVA** ***September 2023 - Present***

- Head of *Diagnosis* machine learning team, use PyTorch on medical images/X-rays to detect anomalies against healthy patients, diagnose medical conditions & standardize images using convolutional neural networks (CNNs) and Spatial Transformers.
- Spearhead development and implementation of a novel model with hopes to publish a research paper.

***Teaching Assistant,* CS3100 (Algorithms) & CS2130 (Computer Systems) at UVA** ***August 2022 – May 2023***

- ***DSA2***: Led discussions in teaching: algorithms of graph traversal (BFS, DFS, Dijkstra's, Prim's, Kruskal's), greedy algorithms, dynamic programming, recursive relations, proofs, machine learning algorithms, NP/NP-C, runtime analysis.
- ***CSO1***: Direct student learning in C/C++, computer architecture, x86, computer memory, logic gates, writing Assembly, CLI, Linux, SSH, IP, and version control using Git. Led lab sections of ~100 students, owned teaching responsibility for 15 students.

***Cofounder, Executive Board, and Developer,* Project Code Club at UVA** ***January 2022 - Present***

- Spearheaded ***Stock Market Bot*** project using **Scrum** methodology: utilized natural language processing NLTK library for sentiment analysis on scraped news headlines concerning stock market trends, and regression on live stock market data to make prediction on stock. Implemented with Beautiful Soup, React to display results of analysis, integrated with Flask.

## PROJECTS

- ***BudgetBuddy***: **Winner of Capital One's Best Finance Hack HooHacks 2023** *Twilio API, GPT API, JavaScript, Python, Flask*
  User can connect/share access to bank account transaction history and data with Plaid API, make budgeting plan, see current spending analysis on dashboard, and communicate on mobile with app's chatbot through SMS texts for purchasing advice, viewing current progress, or for financial advice, which uses Twilio and GPT API.
- ***HooEvents:*** *Django, PostgreSQL, Heroku, Bootstrap, Google OAuth, Google Maps API, GitHub Actions, JavaScript*
  Social app for students to post, connect, and find events, locations, and event times at UVA. Solely responsible for login with Google OAuth, pin locations and find directions to events, manage database and migrations to Heroku. Automated CI & testing with GitHub Actions.
- ***Pacman Artificial Intelligence***: wrote Q-Learning and Approximate Q-Learning algorithms to train a bot to successfully play and win almost every game of Pacman provided on various size boards, trained on only 50 training games.
- ***Traffic Detection AI****:* utilize Random Forest and RNNs to build and train models predicting if traffic will occur on roads an hour in advance, with 92% validation accuracy on binary classification of traffic. Dataset from detectors set up by ETH Zurich.
- ***HearIt****: Angular, Django, Django REST Framework, TypeScript, PHP, PostgreSQL, Bootstrap, Spotify API*
  Music social media web app where users can share posts to global & friends-only feed of favorite songs/artists/albums, join communities of similar interests, add friends, like/share comments on posts, and play snippet of song directly from post.

## ACHIEVEMENTS

- University of Virginia SEAS Dean's List: Fall 2021, Spring 2022, Fall 2022, Spring 2023
- National Merit Commended Scholar, Class of 2021