NATHAN (YANG) WU

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EDUCATION

Columbia University New York, NY
Master of Science in Computer Science *Expected Dec 2022*

University of California, Santa Barbara (UCSB) Santa Barbara, CA
Bachelor of Science in Computer Science, Minor in Statistics *Jun 2021*

- Operating System, Database, Computer Vision, Data Structure and Algorithms, Advanced Applications Programming, Machine Learning, Translation of Programming Languages
- CS Outstanding Undergraduate Research Award, Computer Science Distinction in the Major Program, College of Engineering Honor Program, Early Research Scholars Program (ERSP), Dean's Honor

SKILLS

- Languages: Python, C, C++, C#, R, Java, JavaScript, TypeScript, HTML5/CSS, SQL
- Frameworks: scikit-learn, TensorFlow, Unity, OpenCV, Numpy, Pandas, Angular, Django, Flask
- Other Tools: Git, Jira, Confluence, Jupyter Notebook, VSCode

EXPERIENCE

Ark7 Properties LLC *Jun 2021 - Sep 2021*
Software Engineer Intern

- Built RESTful APIs with **Koa.js** and **Mongoose.js** to handle front-end requests and communicate with **MongoDB**
- Provided users with more direct insight on their investment performance by designing and implementing an interactive chart with **Chart.js** to showcase time-series data of historical account values for past 12 months
- Improved marketing work efficiency by constructing a user information page with **Angular.js** to support displaying and selecting user data with filters, allowing marketing team to classify and study different target user groups from over 1000 seed users
- Added a group notification channel allowing marketing team to push messages to over 500 mobile users with specified tags on a single request

Bionic Vision Lab - UCSB *Jan 2020 - Jun 2021*
Research Assistant (Advisor: Michael Beyeler)

- Led a project using **Unity** and **Barracuda** to run Google **Body Pix** deep learning model on customized 3D scenes with real-time object segmentation running at 60 FPS
- Implemented algorithms in Unity shader to achieve visual effect such as blur effect and edge detection
- Launched experiments in Unity to support graduate student researchers. Tests includes using previous frame as input for current frame rendering, debugging in Unity shader, and Field of View measurement in VR
- Reviewed over 400 papers focusing on AR/VR's application in visual impairment

PROJECTS

Citi Bike Info Database Web Application *Sep 2021 - Oct 2021*

- Designed a **PostgreSQL** database and drew ER diagram to showcase entities and relationships
- Created and stored 7 database tables on **Google Cloud Platform**
- Developed a web application with **Flask**, **SQLAlchemy** and **Javascript** to interact with database hosted on Google Cloud

Linux Kernel Based Operating System *Jan 2021 - March 2021*

- Implemented an operating system in **C** that supports memory management, file system, console interaction and multi-thread execution of programs
- Developed system calls based on Linux manual page information, including read, write, fork, dup, etc.

Author Attribution Task with ML Method *May 2020 - Jun 2020*

- Analyzed and preprocessed text data in Python with **Scikit-learn** library and Word Embedding techniques
- Built a multi-class classification model with machine learning methods to predict authors using text snippets from authors' books with 85% accuracy

Spring Boot Web Application *Oct 2019 - Nov 2019*

- Created a **Spring Boot** web application with **Java** hosted on **Heroku**; set up **Travis CI** for auto testing
- Employed third-party API **GitHub OAuth** for login authentication and USGS API for retrieving geographical data

CONFERENCES

- Augmented Humans, an academia conference focused on HCI research; attended as an article author to present research results
- oSTEM Conference, the largest LGBTQ professional conference dedicated to promoting inclusion in STEM fields; attended as UCSB chapter representative