

Brandon Ho

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EDUCATION

University of California San Diego

GPA: 3.98/4.00

Bachelor of Science in Computer Engineering, Regents Scholar

exp. June 2023

- Relevant Coursework: Computer Organization And Systems, Mathematics For Algorithms And Systems, Artificial Intelligence, Advanced Data Structures (Planned), Components and Design Techniques for Digital Systems (Planned)

EXPERIENCE

InflammaSense

Lerman Lab

Software Developer and Undergraduate Research Assistant

January 2021 - Present

- Building a medical device to record and analyze neural signals for early signs of infection leading to sepsis or death
- **Data Analysis:** Using spike sorting algorithms (TSNE and DBScan) to analyze ECG and magnetic sensor data
- **GUI Development:** Developing a GUI for the high throughput (8000 samples/sec) neural output with PyQt5.
- **Network Architecture:** Designing a robust asynchronous network with the ZeroMQ API for the wireless display, transmission, storage (PostgreSQL), and analysis of neural data for an array of 100+ medical devices (~155 Mbps)

Yonder Dynamics

La Jolla, CA

AI Software Developer

October 2020 - Present

- Programming a rover to autonomously pathfind and perform tasks in the University Rover Competition
- **Autonomous Pathfinding:** Researching and implementing RRT* search algorithm across a live updating 2D probability map, increasing rover exploration speed around obstacles by ~10x

Bae Lab

UCSD Department of Nanoengineering

Undergraduate Research Assistant

September 2020 - Present

- Researching computational methods to control hydrogel mechanics via analysis of microscopy images and modulus
- **Web Scraping:** Developing an NLP scraping algorithm with Selenium and BeautifulSoup to compile properties and images from 1100+ public articles
- **Computer Vision:** Implementing YOLOv5 and Tesseract-OCR models to analyze figures and extract relevant info

Coding for Impact

Your Life Counts

Web Developer

July 2020 - Present

- Assisting suicide prevention nonprofit Your Life Counts in web development, reaching out to 1300+ people
- **WordPress:** Using PHP/CSS/HTML/JS to create and design lightweight dynamic plug-ins (video carousel)

PROJECTS

UCSD Connect

IEEE Quarterly Projects

Connecting UCSD students during the COVID-19 social isolation crisis

December 2020

- Led a team of 5 developers to create a college social media app and win 2nd Place in the 2020 UCSD IEEE QP
- **Full-stack App Development:** Utilized Android Studio to design app UI and back-end (login, matching, chat)
- **Workflow Management:** Directed communication between front/back-end and workflow + issue creation in GitHub

PersonAI Chat

UCSD Summer Program for Incoming Students

AI Chatbot with Customizable Personas

August 2020

- Led a team of 4 developers to create the back-end for the AI chat site, ProfessorUWU
- **TensorFlow/OpenAI GPT:** Implemented TensorFlow with OpenAI GPT's Transformer-based language model on custom dialogue datasets to create unique personas to chat with

SKILLS AND INTERESTS

Programming Languages: Python, Java, C++, SQL, JS, PHP, HTML/CSS

Technologies: AWS, Git, Jupyter Notebook, Linux

Frameworks: ZeroMQ, TimescaleDB, NumPy, Pandas, SciKit, PyTorch, React.js, Node.js, ROS