

# Brandon Ho

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## EDUCATION

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### 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

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### 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

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### 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

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**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