Amir Modan

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U.S Citizen

EDUCATION

San Francisco State University, San Francisco, California   August 2020 – December 2022
Degree: M.S Electrical & Computer Engineering
GPA: 4.00

San Francisco State University, San Francisco, California   August 2018 – December 2021
Degree: B.S Computer Engineering
GPA: 3.93

EXPERIENCE

- Research Assistant at SFSU   February 2021 – December 2022
  - Developed and tested *MyoHMI*, an Android-based Neural-Machine Interface capable of recognizing a user's physical intent from surface EMG signals, useful for medical applications such as Stroke Rehabilitation and Amputees; Additional technologies used include BLE and TensorFlow Lite.
  - Designed an Android app to be used with the *T'ena Sensor* from the T'ena Health Group. The app allows users to record and view IMU data received from the sensor after performing sets of exercises. Technologies used include AWS (Lambda, RDS, S3), Docker, MySQL, and Bluetooth Classic.
- Information Systems Intern for SL Corporation   June 2017 - August 2017
  - Assisted in updating hardware and software packages, revising documentation, installing computer and network systems, removing malware and other security threats, monitoring computer system backups, and preventing data corruption.

PROJECTS

- Remotely led a team of 6 in designing a Full-Stack Web Application using Bootstrap and Express for front and back ends; AWS EC2 used to host server.
- Developed a Desktop-Based Neural-Machine Interface in Python similar to MyoHMI using Deep Learning Convolutional Neural Networks as the Classifier and BLE for communication; TensorFlow used as a library.
- Assembled an MCU-Based Security System to detect theft and report status to the user via an online server using C and Python to program an ARM-based MCU and Raspberry Pi, respectively.
- Built an ARM-based MCU-Based Quake Detector to detect Seismic Activity; Also capable of entering a Hibernation State when overheating.
- Designed an ASIC capable of performing video compression using motion estimation, designed at the RTL level using Verilog HDL, verified using SystemVerilog, then built at the physical level using Synopsys Primetime and IC Compiler tools.
- Designed the layout for a 32x16 SRAM IC at the transistor level using Synopsys Custom Compiler.

SKILLS

- Languages: Java, C/C++, Python, MySQL, HTML, CSS, JavaScript, ARM Assembly, and MATLAB.
- Platforms: AI, Embedded Systems, Computer Networks, UNIX, Mobile, and Web Development.
- Frameworks: TensorFlow, Pytorch, Bootstrap, React.js, Next.js, Express.js, and Node.js.
- Comfortable with GitHub, AWS, Data Structures, Software Engineering Processes, Microsoft 365, and Zoom.

PUBLICATIONS

- Charmayne M. L. Hughes, Bao Tran, Amir Modan, and Xiaorong Zhang, "Accuracy and Validity of a Single Inertial Measurement Unit-based System to Determine Upper Limb Kinematics for Medically Underserved Populations", Frontiers in Bioengineering and Biotechnology, DOI: 10.3389/fbioe.2022.918617, 2022. [IF: 5.66 as of 2022]
- Bao Tran, Xiaorong Zhang, Amir Modan, and Charmayne M. L. Hughes, "Design and Evaluation of an IMU Sensor-based System for the Rehabilitation of Upper Limb Motor Dysfunction", In proc. of the 9th IEEE RAS/EMBS International Conference on Biomedical Robotics and Biomechatronics (BioRob 2022), Seoul, Korea, August 21-24, 2022.