Jingyi Shen

(517) 303-6017 | jingyish@bu.edu | linkedin.com/in/sjy15

EDUCATION

BOSTON UNIVERSITY   Boston, MA
Master of Science in Electrical and Computer Engineering   05/2023
- College of Engineering Graduate Scholarship
- Courses: Digital VLSI Circuit Design, Fabrication Technology for Integrated Circuits, Lasers and Applications, Product Design in Electrical and Computer Engineering, Design by Software

MICHIGAN STATE UNIVERSITY   East Lansing, MI
Bachelor of Electrical Engineering   05/2021
- Dean's List (5 semesters), Scholarship of Walter R. Yates Memorial Foundation
- Courses: Control system, Digital Signal Processing, Microcontroller, Digital Circuit, Analog Circuit, Computer Aided Manufacturing, Energy Convert & Power Electron, Intro to Biomedical Imaging, Electromagnetic Fields & Waves

SKILLS

- **Electrical & Computer Engineering**: PCB, Cadence, Keil uVision, CAD, UG_NX, PLC, VHDL, Verilog, RF, Arduino
- **Coding and Algorithm**: C/C++, Python, MATLAB/Simulink, Digital Signal Processing, Machine Learning

WORK EXPERIENCE

National Electrical Engineering Consultants LLC.   Permbroke Pines, FL
BESS Engineer   01/2024-Present
- **Equipment Debugging / Technical Support:** Conducted debugging and troubleshooting for energy storage battery systems, including BYD and CATL battery systems, ensuring optimal performance and functionality.
- **Cold & Hot Commissioning**: Performed cold commissioning and hot commissioning for energy storage battery systems, ensuring proper functionality and performance under operational conditions
- **Emergency Repairs:** Responded to emergency repair tasks, promptly addressing battery system failures to prevent damage or system downtime due to delayed repairs
- **Cross-Cultural Communication:** Acted as a communication bridge between Chinese and American engineering teams, facilitating technical discussions and ensuring smooth project execution
- **Technical Support:** Provided technical support to the team, resolving complex technical issues during debugging processes and ensuring timely project delivery

PROJECTS

Multielectrode Arrays (MEAs) Data Analysis for Retina Prosthetics   Boston, MA
Boston University, Advised by Dr. Yang Chen   09/2022-05/2023
Aim: Processing large scale datasets and analyzing bio-signal to confirm retina prosthetics' precision rapidly.
- **Data Acquisition:** Acquired electrical response data of retinal cells from mice upon photoacoustic stimulation by MEA21000- HS256 for analysis.
- **Signal processing:** Denoised the raw signal with Wavelet filter in MATLAB to improve the signal-to-noise ratio from -10 dB to -0.1 dB; Explored Thresholding, Template Based Correlation, and Transient Energy algorithms to detect spikes and write MATLAB code to analyze MEAs data with 256 channels, 10000Hz.
- **Data Analysis and Visualization:** Created a dynamic heat map to make the neuron activity to be visible and successfully tested retina prosthetics precision.

Brain-Computer Interface Research   Boston, MA
MSU/BU, Advised by Dr. Vaibhav and Dr. Aslam   01/2021-05/2023
Aim: Designing brain-controlled wheelchairs and analyzing motion using EEG datasets.
- **Brain-controlled Wheelchairs:** Processed and categorized brain waves into 5 primary types, correlating each with attention and meditation levels, leading to the creation of a mind-wave controlled robot, interfaced with an EEG headset and Arduino.
- **Algorithm development:** Sorted and classified the data features (Root Mean Square, Mean Absolute Value, Integrated EEG, Simple Square Integral, Variance of EEG, Average Amplitude Change) with machine learning (SVM and NNs) to promote motion control accuracy and improved the motion of the brain wave average recognition rate from 80% to 90%.

Underwater Sensor Hub   East Lansing, MI
Smart Microsystems Lab (SML) of Michigan State University, advised by Dr. Vaibhav   01/2020-05/2020
Aim: Developing an underwater sensor hub that can detect and monitor the environment at 30-meter depth for more than 6 hours.
- **Circuit Design and Structural Engineering:** Designed the circuit system with a regular voltage and power filter to provide power and connect the micro-controllers. Designed the underwater sensor hub structure with team members using AutoCAD.
- **System Integration:** Selected ethernet for real-time signal transmission; Seamlessly integrated sensors and the power control system with a Raspberry Pi, enabling efficient signal acquisition and transmission from various sensors outside of the sensor hub to the surface craft.