PO LIU

HONOURS IN NEURAL ENGINEERING

Interested in **rehabilitation** & **diagnostic technology** such as Brain Computer Interfaces, medical imaging and bioelectric medicine.

Aspire to integrate **electrical** engineering, **machine learning** and **neuroscience** to improve peoples quality of life.

Experienced in physiological **signal analysis**, data analytics and electronic/robotic devices.

Looking for **R&D / internship roles** in biomedical/machine learning engineering.

SPECIALIZATIONS

Machine Learning – Sklearn | TensorFlow

Signal processing – EEG / time series analysis

Hardware – Microcontrollers | Electronics

CAD design – Fusion360

Python3 – OpenCV | MNE | Pandas | Jupyter Notebook

PUBLICATIONS

Does Real-Time Feedback Improve User Performance in SSVEP-Based Brain-Computer Interfaces (EMBC2022 – **accepted**)

RELEVANT EXPERIENCE

Vacation Scholar
CSIRO (H&B) | NOV 2021 – FEB 2022

- Sociodemographic, cognition & structural brain correlations with sleep & circadian rhythm
- High Performance Computing
- Big data processing & statistical modelling
    - UK BioBank
- Python3, VIM, Linux, GGIR, Jupyter notebook

Neural Engineer
ANNEX NEUROSCIENCE (STARTUP) | NOV 2021 – MAR 2022

- Generative Adversarial Network in brain MRI image generation
- Python3, Tensorflow, Google Colab

Biomedical Engineering (Dual) Intern
ANZIC/BAKERS INSTITUTE | DEC 2020 – MAR 2021

- Multi-model ICM+ data curation
- Physiological data processing
- Automatic artefact correction
    - Empirical Mode Decomposition
- Simulink heart model GUI
- Python3, Jupyter notebook, MATLAB

Mechatronics & Autonomous Systems Junior
MELBOURNE UNIVERSITY RACING | MAR 2020 – NOV 2020

- ROS controller for simulation in Gazebo
- Designed suspension data acquisition systems
- Fusion360, GitHub, ROS, Python3 & C++

PROJECTS

Brain Computer Interface Projects Lead
MELBOURNE BIOINNOVATION STUDENT INITIATIVE

- **Tetraplegic wheelchair BCI**
- **BCI speller for smart home & communications**
- Translate BCI research for real world applications
- Machine Learning + Data analytics
- Develop student skillsets and build BCI interest
- P300, Motor Imagery, Error Related Potentials
- Python3, G.tec EEG, Sklearn, Signal processing

Error Related Potentials in SSVEP BCI
HUMAN ROBOTICS LABORATORY – RESEARCH INTERN

- Efficacy of integrating Error Related Potentials in SSVEP BCI
- Role of feedback in BCI performance
    - Paper **accepted** (EMBC2022)
- MATLAB, Python3, R&D protocols, Signal processing

PO LIU

NEURAL ENGINEERING

PROJECTS

3DOF Robotic Arm
AUTONOMOUS ROBOTICS RESEARCH PROJECT

- Fusion360 + 3D printed & portable
- Wii nunchuck + power supply
- PCB design
- Inverse kinematics
- C++, electrical assembly, electronics

Whackamole BCI
PASSION PROJECT

- Machine learning + Data analytics
- Handsfree Whackamole
- Concentration + motor imagery
- OpenBCI EEG, Python3, Sklearn, Signal processing

Holographic Microscopy
NEURAL DYNAMICS LABORATORY – STUDENT RESEARCHER

- Fusion360 + 3D printed & Portable
- Translation of research to accessible concept
- Biomedical imaging
- Optoelectronics, MATLAB, Image processing

CONTACT

- 0481 565 666
  72 lambeth St, Kensington, VIC
- Portfolio Website
  popo-liu.netlify.app
- LinkedIn
  https://www.linkedin.com/in/po-liu-science-slave/

EDUCATION

University of Melbourne
HONOURS IN BIOMEDICINE (NEURAL ENG)
- Melbourne University Electrical Engineering Club
- Melbourne Bioinnovation Student Inititiative
- Engineering Music Society

University of Melbourne
BACHELOR OF SCIENCE (ELECTRICAL ENG + NEUROSCIENCE) – 2021
- Melbourne University Electrical Engineering Club
- Melbourne Bioinnovation Student Inititiative
- Engineering Music Society
- Melbourne University Biomedical Engineering Club

VOLUNTEERING

2022
Engineers Without Borders – Regioneering, Maths Without Limits, Metroneering

2021
VCE Summer School Tutor – Physics, Mathematics
In2Science Mentor

2020
In2Science Mentor
Melbourne University Peer Mentor

PROFESSIONAL REFERENCES

Dr Sam John - Senior Neural Engineering lecturer at the University of Melbourne

Jing Mu - PhD Candidate at the University of Melbourne

Betty Zhang - Student Science Squad charity CEO

Contact details upon request.