# Lei Luo

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https://reveroyl.github.io/

## EDUCATION

**King's College London**

Neuroscience Master, Institute of Psychiatry, Psychology & Neuroscience — London

"3+1" Joint Undergraduate and Master Training Program at King's College London and Southern University of Science and Technology. (Only 3 people were chosen and funded in 2021 at SUSTech) — Sep 2021 - Sep 2022

Dissertation: *"The utility of multi-task machine learning for decoding of brain states".*

**Southern University of Science and Technology.**

Bioscience Bachelor, College of Life Sciences — Shenzhen

GPA: 3.5 /4.0 — Sep 2018 - Sep 2021

Dissertation: "*Mechanism Inquiry of the potassium-ion-stimulated calcium activity in vascular pericytes".*

## PROFESSIONAL EXPERIENCE

**Professor Hou Shengtao laboratory** — Shenzhen

Internships — Sep 2019 - Jun 2022

- As the secondary contributing author, publish an article titled *"40 Hz light flicker alters human brain EEG microstates and complexity implicated in brain diseases"* on Frontiers in Neuroscience. Data was collected with EEG and analyzed with python.
- Extract, isolate and culture pericytes from mice and try to build a system for recognizing pericytes from all cells by neural network deep machine learning.
- The National College Student Innovation and Entrepreneurship Training Program in China, with the topic "*rhythmic flicking can save hippocampal γ and protect i schemic neurons by affecting pericytes*".
- Engaged in the lipidomic research of stroke. Learned cell culture techniques and experiment with calcium imaging, immunofluorescence methods. Learned the cardiac perfusion techniques and construction method of creating mouse tMACO models.
- Designed and did behavioral experiments for example water maze, Y maze, novel object recognition.

**Southern University of Science and Technology - Queensland University Joint Neuroscience and Nervous Engineering Research Center** — Shenzhen

Student assistant — Oct 2019 - Oct 2021

- Cooperated to organize the national scientific seminars. Periodically biweekly contacted with researchers, typeset and post the announcement for each seminar.

**Chinese Institute for Brain Research, Beijing** — Beijing

Camper — Jan 2021 - Feb 2021

- Engaged in the winter camp of the Chinese Institute for Brain Research, Beijing and became an excellent camper. Attended a two-week course and gave a presentation with the group.

**Professor Xiao Guozhi laboratory** — Shenzhen

Internships — Jun 2019 - Sep 2019

- Learned laboratory basic knowledge, a series of model animals' experiments.
- Made contributions to the main project by doing designed experiments weekly.
- Determined my interest in neuroscience.

**Dr Toby Wise laboratory** London

Master project Mar 2022 - Sep 2022

- Optimized the accuracy of aversive state reactivation model (MEG)
- Generalized behavior prediction model by data optimization, algorithm optimization, fitting model modification
- Applied multi-task machine learning decoding brain states

## HONARS and AWARDS

**Publications**

*40 Hz light flicker alters human brain EEG microstates and complexity implicated in brain diseases* (as the secondary author, Frontiers in Neuroscience) (IF: 4.501)

**Awards**

The Study Abroad Program Scholarships for Undergraduates of the Southern University of Science and Technology (2021, 2022)

Third Prize Scholarship in Zhicheng College of the Southern University of Science and Technology (2019)

The Third Prize of the National High School Mathematics Competition (2018)

## SKILLS, CERTIFICATIONS & OTHERS

**Programming:** Python and R (used in my previous and current research), Java (courses), html & ejs (blog)

**Languages:** Mandarin (Bilingual or native proficiency), Wu (Bilingual or native proficiency), English (Complete professional competence), Cantonese(Limited working proficiency), German (Elementary proficiency)

**Lab Skills:** MRI; EEG; electrophysiology experiments (patch-clamp); calcium imaging; construction of mouse tMCAO model; neurons extraction; immunofluorescence; frozen and vibratome section; cardiac perfusion techniques; etc.

**Club:** Membership in the **supercomputing** and **big data analytics** center for computational science and engineering in Southern University of Science and Technology.