Xuanyu Lu

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Education

Master's degree in Biomedical Engineering: Biomedical and Innovations in Neuroscience

Université Paris Cité/ESPCI PSL /École Nationale des Arts et Métiers: BME Paris 2023.9-2024.9

- Deep Learning Project: Forecast the oscillation frequency in rodents' olfactory bulbs based on behavioral indicators
- Computational Neuroscience Project: Reconstruct brain connectivity map based on matrix
- Thesis: Explore the mental dimensions towards visual scenes extracted from a movie

Machine Learning Specialization

Coursera Online: DeepLearning.AI & Stanford University 2022.12-2023.4

- Course Certificates completed
- Content: Supervised machine learning; advanced learning algorithms; unsupervised learning, recommenders, reinforcement learning

Bachelor's degree in Biomedical Engineering

China Medical University 2014.9-2018.7

- Computer science, electrical engineering and medical courses
- Thesis: Develop biosensors for detecting the differentiation levels of 3D-printed stem cells

Scientific Research

Research Internship: explore mental dimensions behind visual scenes

2024.2-2024.8

Supervisor: Dr. Catherine Tallon-Baudry, Laboratory of Cognitive and Computational Neuroscience, ENS/PSL

- Conduct literature review, design and launch online experiments, and deploy the variation inference model to reveal mental dimensions behind visual scenes extracted from a movie.

Methods and application of multi-phases contrast-enhanced ultra-low dose CT

2023.2-2023.8

Supervisor: Dr. Yang Jian, Department of Radiology, The First Affiliated Hospital of Xi'an Jiaotong University

- Develop a deep neural network model to predict cardiac output based on patients' demographic and physiological parameters. This model aids in selecting the optimal contrast dose for computed tomography angiography.

Bachelor thesis: Development of biosensors based on cell printing technology

2017.12-2018.6

Supervisor: Dr. Wang Xiaohong, China Medical University

- Cultivate hepatocytes in vitro 3D environment, and design a biosensor to specifically detect the hepatocytes in a 3D printing construct. The sensor detects the degree of differentiation of stem cells towards hepatocytes. This work can be used in generating liver from stem cells in vitro 3D environment.

Problem-Based Learning Program: use brainwave music to relieve chronic pain

2016.10-2017.10

Supervisor: Teaching Assistant, Fu Zhiran, China Medical University

- Extract resting EEG signals from patients with chronic pain. Since the scaling property is common between music and EEG, transform the alpha wave in EEG into music. The music piece can be used to reduce pain.

Work Experiences

The First Affiliated Hospital of Xi'an Jiaotong University

Radiology Technician 2020.10-2023.8

- Conduct routine patient examinations of Digital Radiography, CT, MRI
- Construct science research topics from clinical practice.

Shaanxi Gaoyuan Medical Equipment Service Co., Ltd

Embedded System Engineer 2019.1-2019.9

- Module design: developed modules of the cervical cancer detection equipment in STM32 series single chip using C language.
- New medical product development: investigated the market of the target product, studied the science principles of the application, and organized the working flow of the product.

Publications

The 29th National Scientific Congress of the Chinese Society of Imaging Technology 2021.11

Compute puncture entry position and angle based on the ideal breast model, Conference Poster.

The application of medical 3D Printing technology and the choice of medical image data, Conference Poster.

Conferences

- Worked as a volunteer staff at the 2022 National Youth Academic Conference organized by the Chinese Society of Imaging Technology 2023.1
- Hosted the 2022 Big Data of Medical Image Academic Conference organized by the Chinese Hospital Association 2022.8

Skills

Programming Language: Matlab, Python, C, C++, HTML

Languages: English (Professional working proficiency), Chinese (Native)