Siqi Li

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Personal Website: https://lsqami.github.io/IamWho/
Academic focus: deep learning, neuroscience

Profile

Bachelor candidate with solid knowledge foundation of all subjects of information and strong practical ability in deep learning. Interested in combining neuroscience with artificial intelligence to explore the principle of intelligence. Able to face pressure and failures with active attitudes. Careful and well-organized fulfilling tasks. Good at learning new skills quickly when needed.

Education

Department of Electronic Engineering, Tsinghua University 2019/8-now

Electronic Information Science and Technology, Candidate for Bachelor of Engineering

- **GPA:** 3.62/4.00
- **Courses:** Machine Learning, Digital Image Processing, Signals and Systems, Data Structure and Algorithms, Probability, Stochastic Processes, Statistics, System and Computational Neuroscience .....

Publications

Zijian Z., Yali L., Yue Z., **Siqi L.**, Shengjin W. (2023). **FTAN: Exploring frame-text attention for lightweight video captioning.** International Conference on Computing and Pattern Recognition. (Accepted)

Xin L., **Siqi L.**, Yali L., Shengjin W. (2023). **Whole brain fMRI encoding deep neural network model learns shared representations across individuals.** (In preparation)

Program Experience

The Algonauts Project 2023 2023/6-2023/7

- Trained an encoding model based on ConvNeXt to predict the fMRI signals of human brain with single-trail images viewed by the subjects as input. The structure of Feature Pyramid Network was used to avoid overfitting, and sparse dictionary learning was used to reduce the memory occupied by the model. Caption of the input images and behaviour data of the subjects was used as an attempt. The model ranked 5th on the final leader board of the competition.

Analyzing Brain Imaging of Visual Cognition with Transformer 2022/10-2023/6

Research Intern, Department of Electronic Engineering, Tsinghua University

- With Transformer models based on Pytorch, multi-label classification is performed on fMRI images of the human brain in the NSD dataset based on the labels of the images viewed by the subjects. The impact of different brain regions on classification is then analyzed based on the attention weights.

Anatomically Interpretable Deep Learning of Brain Age and Genotype 2022/6-2022/10

Research Intern, Viterbi School of Engineering, University of Southern California

- Estimated brain age and genotype from brain MRIs with an anatomically interpretable 3D-CNN model. Predict the gap between brain age and chronological age with genotype data represented in SNPs, using full connection neural networks. Computed Linkage disequilibrium to select typical genotype.

Tsinghua University 2021 Competition of Intelligent Robot 2021/6-2021/9

- Trained a CNN to enable the Ultra96-V2-based intelligent robot to recognize different targets. Let it detect blocks of different colors, and avoid stationary or moving obstacles. Calibrated images from its camera against grid markers to confirm its position to let it walk accurately following a planned path.

Identifying Cell-type-specific Gene Regulatory Elements with Machine Learning 2021/3-2021/7

Student research program, Institute for Information Processing, Tsinghua University

- Used linear regression and full connection neural network to select single cell methylation and chromatin accessibility features that could specify cell type.

Work Experience

Algorithm Engineer Intern, Hesai Technology 2023/7-2023/9

- Built a dataset consists of simulated LiDAR point cloud data and photos generated with Unreal Engine under driving scenes. Trained a BEVFusion model with this dataset to conduct multi-module 3D detection task. LiDAR products were defined and tested with this process.

Awards

Tsinghua University Comprehensive Excellence Award 2022-2023

Tsinghua University Sports Outstanding Award 2020-2021, 2021-2022

Activities

Tsinghua University Mayuehan Cup Soccer Match, *Quarterfinals* 2022/10-2023/4

Xinya College Table Tennis Match, *Champion* 2022/3

Liaison Department of Xinya College Student Union, *Minister* 2020/11-2021/5

Tsinghua Mountaineering Club 20 Kilometers Weight Bearing Hiking 2020/11

Class Xinya92, *President* 2020/9-2021/8

Other Expertise

Programming: Python, Matlab, C/C++

Language: TOEFL 103 (R28, L29, S22, W24), GRE 327 (V157, Q170)