Tong Li

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EDUCATION

Johns Hopkins University, *M.Sc. in Applied Mathematics and Statistics*, Jun 2023
Xi'an Jiaotong University (China) *M.Sc. in Statistics*, Jun 2022
Northeastern University (China) *B.S. in Applied Statistics*, Jun 2019

RESEARCH INTEREST

Machine Learning and Optimization Applications in Health Care and Marketing Operations

PUBLICATIONS

• Anran Liu, Xiangsheng Huang, Tong Li, Pengcheng Ma. Co-Net: A Collaborative Region-Contour-Driven Network for Fine-to-Finer Medical Image Segmentation, WACV 2022.

PROJECTS

Bias Field Correction of MR Images: Develop a solution of bias field correction based on a deep neural network that generalizes to a very broad set of data including generalization to a) scanner manufacturers, b) image resolutions, c) field strengths, and d) participant and patient cohorts, which is much faster than traditional tools such as SPM, N4, etc.
Supervisor: Martin Reuter, Athinoula A. Martinos Center
2023.07 – *current*

The Pipeline of 3D Restoration Algorithm of In Vitro Synapse Imaging and 3D Detection of Synapses: Design and construct an algorithm pipeline that can improve the in vitro imaging resolution of fluorescent labeling of synaptic proteins from transgenic mice. Perform synaptic segmentation of repaired images with a small volume of training data and sparse annotation.
Supervisor: Adam Charles, Johns Hopkins University
08.2022 – 05.2023

Reconsider Multi-objective Black Box Bayesian Optimization Algorithms: Reconsidered and reorganized the implementation and performance of some classical and cutting-edge Multi-objective Black-box Bayesian optimization methods; Compared the performance of these methods in different scenarios with various test functions and real-world setting problems from Aliyun.
Supervisor: Yanxun Xu, Johns Hopkins University
09.2022 – 12.2022

Pathology Detection and Segmentation of Electron Dense Deposits in Electron Microscope of Kidney: Designed a collaborative neural network model driven by edge and spatial information to solve the difficulties of complex spatial features and blurred boundaries in the electron-dense deposits segmentation task; Conducted experiments and verified the effectiveness and superiority of the established model.
Supervisor: Xiangsheng Huang, Chinese Academy of Sciences
Paper accepted by WACV,2022. 08.2020 – 11.2021

Performance Parameter Evaluation and Anomaly Detection for Inertial Navigation System: Identified fluctuating data in a sequential and phase-wise manner by calculating index-weighted volatility in a sliding window to detect abnormal flight status; Processed inertial navigation data for alignment and outlier detection and evaluated navigation errors using a variety of Bootstrap methods that can obtain error estimation intervals in small sample situations.
Chinese Flight Test Establishment; Xi'an Jiaotong University
08.2019 – 2021.02

Sentiment-Factor-Assisted Machine Learning-Based Bitcoin Market Analysis: Cleaned massive text data from multiple social media; extracted sentiment factor from multiple dimensions and combined weighting factors such as the number of likes to construct sentiment metrics; Designed an improved GRU model to analyze the price trend of Bitcoin based on historical trends and sentiment metrics.
Supervisor: Patrick Houlihan, Columbia University
08.2020 – 11.2020

SKILLS

Languages: Python, R
Applications: MATLAB, SPASS, Eviews, SQL

AWARDS AND HONORS

Meritorious Winner
04.2018
COMAP(Consortium for Mathematics and its Applications, US)'s Mathematical Contest in Modeling (MCM)

Second Place
11.2020
"Huawei Cup" China Post-graduate Mathematical Contest in Modeling

Teaching Experience

Teaching Assistant: Computational Molecular Medical Science, Johns Hopkins University, 2023