ZHILANFAN   zhilanfan@hotmail.com

EDUCATION

Sun Yat-sen University (SYSU)   Guangzhou, China

Bachelor of Science in Mathematics and Applied Mathematics (expected)   08/2015- 06/2019

- Overall GPA: 3.5/4.0
- Honors: Third Prize Scholarship in 2016 & 2018; Ethic Award Scholarship in 2017

RESEARCH EXPERIENCE

◆**Shenzhen Institutes of Advanced Technology, Chinese Academy of Science**   08/2018-Present

Working Project: **Screening Atrial Fibrillation from Single Lead Short ECG Recordings**; supervised by Dr. XIAOMAO FAN

Introduction: We made good use of various deep learning algorithms to screen Atrial Fibrillation from normal and other ECGs on PhysioNet/Cinc, with the hope to help aging people monitor their health with wearable devices.

- Reached a highest classification accuracy of 86% with Residual Network model
- Visualized the features extracted by ResNet and discovered the potential problems of the data set
- Attempted to apply Active Learning to selection of the most representative and informative samples
- Computed the Generalized bSQI of ECGs to evaluate the signal quality and identified noise by XGBoost classifier with a highest recall rate of 94%
- Introduced multi-scale entropy method to analyze signals

PROJECTS

◆**Pricing scheme for the crowdsourcing system**   09/2017

- Given dataset of the tasks and their price in a crowdsourcing system, we explored the current pricing rules their possible factors by K-means clustering, manual feature extraction and Logistic Linear Regression
- Determined the task completion with XGBoost classifier
- Iteratively optimized an index of task completion and price to set up new pricing scheme for new tasks

◆**Models of HF Radio Reflection off Ocean Surface during Multi-hop Propagation**   02/2018

- Modeled the radio reflection off calm and turbulent ocean by specular and diffuse reflection, calculated the two reflection coefficients to determine the reflection loss respectively; compared with cases of terrain
- Added loss of ionosphere reflection and space fading to the radio propagation loss model
- Introduced the Doppler effect to accommodate the moving signal receiver on the sea

◆**Gender Identification of Streaked Shearwater Based on their Behavior** (CodaLab Competition: Animal Behavior Challenge (ABC2018) for understanding animal behavior)   07/2018

- Depicted the birds' flight path as RGB images to represent the multidimensional time series data
- Extracted image features by VGG-16 pre-trained on ImageNet and eight more manual features (e.g. maximum speed and distance), and then fine-tuned an XGBoost classifier
- Analyzed the characteristic of the two gender by visualizing some features
- Our team ranked 11/77 in the competition

TECHNICAL SKILLS

◆Proficient in MATLAB, R, Python

◆A-levels in programming related courses: Advanced Computer Language Programming (C, C++), Data structure and Algorithms, Digital Image Processing

EXTRACURRICULAR ACTIVITIES

◆**Charity Bookstore of Schooling-supporting Association in SYSU**   05/2016-06/2017

Charity Bookstore Manager

- Mainly responsible for books recycling and selling, raised a total fund of RMB 30,000 in a year for building book corners in primary schools in less developed areas
- Organized Christmas week activities; the income was used to fund a student

◆**Explore China, Guangzhou Project** (organized by Incoming Global Volunteer Department, AIESEC) 10/2016-01/2017

Member of Organized Committee Team, Director of Local Volunteer

- Recruited local and foreign volunteers, planned thirteen activities such as City Orienteering, cultural salons to promote local traditional culture
- Hosted the Project Reporting Conference and World Youth Intangible Cultural Heritage Forum

◆**Research on Chinese Traditional Culture and Grassroots Development, Research Team in Guangdong Province**

 (organized by School of Humanities, Tsinghua University)   08/2017

Assistant of the Research Team

- Assisted the research team in communicating with local people in Cantonese in four cities of Guangdong province
- Participated in the research of new village construction, education construction and so on
- The research team won Silver Prize of Excellent Team in Students Social Practice of Tsinghua University