Wu Xiaotong

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EDUCATION

Southern University of Science and Technology (SUSTech) **2022/09-Present**
Master of **Mathematics** GPA **3.54/4.0**
South China University of Technology (SCUT) **2018/09-2022/07**
Bachelor of **Mathematics and Applied Mathematics** Rank **7/66** GPA **3.71/4.0**
Bachelor of **Finance** (dual degree)
Professional Courses: Probability (96), Data Mining and Statistics Decision (97), Machine learning (94)

RESEARCH EXPERIENCE

Unsupervised Effective Labeling for Semi-supervised Learning and its Application **2023/02-Present**

- Inspired by three principles for unsupervised data selection proposed in previous paper, three new principles (balance, representativeness and regularization) are proposed
- KNN is used to achieve representativeness, clustering method SPICE is used to achieve balance, and inter-class or intra-class regularization is discussed
- Perform experiments on the CIFAR dataset and verify the effectiveness of our principles
- Our methods and experiments need to be further refined so that they remain valid on imbalanced as well as real-world datasets

Robust retrieval of material chemical states in X-ray microspectroscopy **2022/11-2023/05**

- Formulate TXM-XANES unmixing task as an optimization model, incorporate prior information (Explicit & Implicit Regularization) and enhance the robustness of our model
- Apply the alternating direction method of multipliers (ADMM) to solve our model
- Evaluate our model extensively using both quantitative and qualitative methods on synthetic and real datasets
- "*Robust retrieval of material chemical states in X-ray microspectroscopy*," Optics Express (Accepted), Second Author

HONORS & AWARDS

- The Second Prize Scholarship, SCUT (2019, 2021)
- The Third Prize Scholarship, SCUT (2020)
- The First Prize in "Greater Bay Area Cup" Financial Mathematical Modelling Contest (2020)
- The Third Prize of Guangdong Province, National Student Mathematical Modelling Competition (2020)
- The Honorable Mention of the American Mathematical Contest In Modeling (2021)
- *"Outstanding Graduate"* of School of Mathematics, SCUT (2022)
- *"Merit Student"* , SCUT (2019~2021)
- *"Outstanding Student Leader"* , SCUT (2020)

INTERSHIP EXPERIENCE

Shenzhen "DigQuant" Financial Technology Company **Quantitative Research Internship** **2021/07-2022/01**

- Learn the basics of financial markets and study Commodity Trading Advisor (CTA) strategy
- Simulate the trend strategy, arbitrage strategy and algorithmic trading strategy of futures management by Python
- Use various quantitative indicators (MACD, RSI, KDJ) to identify market signals
- Design and implement CTA strategies based on indicators and trading ideas

PERSONAL SKILLS

- **Programming**:

Python (Competent), MATLAB (Competent), R (Competent), MySQL (Understand), C++ (Understand)

- **Software/API**:

TensorFlow, Pytorch, MS Office, LaTex

- **Algorithm**:

Neural Network (CNN, ResNet); Clustering (K-Means, DBSCAN); Feature Extraction (PCA, t-SNE, MoCo);
Semi-supervised Learning (FixMatch, MixMatch, DARP); SVM; KNN

- **Language**:

English (CET4, CET6, TOEFL), Japanese (JLPT-N1), Mandarin Chinese (Fluent), Cantonese Chinese (Listening)