

## EDUCATION

---

**Southern University of Science and Technology (SUSTech)**  
Master of **Mathematics**

**2022/09-Present**  
GPA **3.54/4.0**

**South China University of Technology (SCUT)**  
Bachelor of **Mathematics and Applied Mathematics**  
Bachelor of **Finance** (dual degree)

**2018/09-2022/07**  
Rank **7/66** GPA **3.71/4.0**

**Professional Courses:** Probability (96), Data Mining and Statistics Decision (97), Machine learning (94)

## RESEARCH INTEREST

---

Machine Learning (Especially Semi-supervised Learning), Image Processing, Learning Theory, Optimization

## RESEARCH EXPERIENCE

---

**Unsupervised Effective Labeling for Semi-supervised Learning and its Application**

**2023/02-Present**

- Three new principles (balance, representativeness and regularization) for unsupervised data selection 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 CIFAR dataset and medical images MedMNIST to 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 RUM
- 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
- KKT conditions is used to analyze the convergence of RUM

## PUBLICATIONS

---

Wang, T., Wu, X., Li, J., & Wang, C. (2023). **Robust retrieval of material chemical states in X-ray microspectroscopy**. *Optics Express* (Accepted)

## 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

## TEACHING EXPERIENCE

---

**Southern University of Science and Technology**

**Teaching Assistant**

- STA201 Operational Research and Optimization, Spring 2023
- STA204 Discrete Mathematics and Its Applications, Spring 2023

## 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-91), Japanese (JLPT-N1), Mandarin Chinese (Fluent), Cantonese Chinese (Listening)