ZHANG, Hongzhen

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My Personal Website: Hongzhen's Personal Website (hongzhengit.github.io)

Education Backgrounds

Tianjin University (member of 985, 211 universities) *2017.09 – 2020.01, GPA: 85/100*
Master's degree of Engineering, affiliated with State Key Laboratory of Precision Measuring Technology and Instruments
Xiamen University (member of 985, 211 universities) *2013.09 – 2017.06, GPA: 82/100*
Bachelor's degree of Engineering, Major in Photoelectronic Measurement Technology
Double degree of Economics, Minor in Mathematical Statistics

Publications

- **Extension of Terahertz Time Domain Spectroscopy: A Micron-level Thickness Gauging Technology**
  Hongzhen Zhang, Lili Shi, Mingxia He*. *Optics Communications*, 506 (2022) 127597.
- **The Application of Stochastic Optimization Algorithm in Terahertz Thickness Measurement Technology**
  Hongzhen Zhang, Mingxia He*, Lili Shi, Pengfei Wang. *Spectroscopy and Spectral Analysis*, 40(2020) 3066-3070.
- **A terahertz non-polar material detection technology based on Rouard's Method**
  with Mingxia He, Lili Shi and Pu Wang. *Invention patent*, Patent No. CN201910303091.9, Waiting for granting.
- **A thickness measurement technology developed with terahertz spectrum**
  with Mingxia He, Lili Shi and Pu Wang. *Invention patent*, Patent No. CN201811197783.1, Granted.
- **A multispectral imaging device for the meibomian glands of human eyes**
  with Yanping Chen, Tianyu Zheng and Yifan Yang. *Invention patent*, Patent No. CN201610250677.X, Granted.

Research Experiences

Research on the information extraction methods for Terahertz Spectra
Tianjin University, Funded by National Natural Science Foundation of China (NSFC) (Grant No.61675151).
Highlights: Model-based Information Extraction Methods developed with Heuristic Optimization Algorithms and LASSO.
Research on a multispectral imaging device for meibomian glands of human eyes
Xiamen University, Undergraduate research project. Highlights: Model-based Image Enhancement.
Research on HAR (Heterogeneous Autoregression) models for Shanghai Composite Index
Xiamen University, Graduation thesis (Double Degree). Highlights: Volatility Modeling with HAR and GARCH models.

Working Experiences

Discover Financial Service (DFS, Shanghai COE) *Senior Analyst, 2020.03 – 2022.07*
- *Project 1*: Developed a Time Series Forecast Model for home loan application volumes to catch the increasing trend in home loan market and help with the future workforce management.
- *Project 2*: Constructed a Neural Network compliant recognizer based on pre-trained Bert model, combined it with a Random Forest classifier to allocate customers' complaints into specific categories automatically.
- *Project 3*: Built a Data Management Platform with PyQt framework for structuring and maintaining invoice data.

Analog Devices (ADI, Beijing Office) *Part-time Algorithm Intern, 2019.07 – 2020.01*
- Borrowed the Complex-domain LASSO algorithm from Muhammad Tabassum (2018) to get a simplified Generalized Memory Polynomial (GMP) Model with sparse parameters.

Awards

- Innovation Award at Discover Financial Service
- Excellence Award at Discover Financial Service
- 1st prize of China National Mathematical Modeling Competition (Undergraduate Group)

Programming Skills

I have solid skills in Python, MATLAB and SQL language and I am also familiar with R software. For more information about myself and my research/working experiences, please check my personal website https://hongzhengit.github.io/.