

FRANK XING

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Academic Qualifications

Ph.D. in Computer Science and Engineering Nanyang Technological University, Singapore Thesis: Textual Knowledge Integration for Financial Asset Management	2016 - 2019
B.Sc. in Information Systems / B.A. in Economics Peking University, China Thesis: Weakly Supervised Image Semantic Segmentation with Conditional Random Field	2011 - 2015

Employment History

Presidential Postdoctoral Fellow, Nanyang Technological University The only awardee in the CS / AI theme, 12 recipients selected from 894 applicants worldwide Conducting research on NLP and knowledge-based financial optimization approaches	2019 - now
Machine Learning Specialist, Continental AG Acted as a technical lead and mentored innovation projects in NLP and machine learning Involved in a conversational AI project that develops question-answering prototypes for industrial use	2018 - 2019
Research Assistant, Temasek Laboratories Developed NLP and sentiment analysis tools based on syntactic rules and knowledge base Developed financial-domain lexicons, extended the Black-Litterman model with machine learning	2016 - 2018

Awards and Honors

Presidential Postdoctoral Fellowship at Nanyang Technological University	2019
Temasek Research Scholarship at Nanyang Technological University	2016
Merit Undergraduate at Peking University	2013
The May Fourth Scholarship at Peking University	2013
Wang Jin-Yun Scholarship at Wuhan No.2 Middle School	2011

Research Grants

NTU-PPF: Innovative Approaches to Portfolio Optimization (PI). 200,000 SGD	2019 - 2021
A*STAR: Human-Robot Collaborative AI (staff). 21,634,800 SGD	2019 - 2020
Continental AG: Conti+ Service Chatbot (staff). 30,070 EUR	2018 - 2018

Publications

My publications focus on applying machine learning and NLP techniques to build **intelligent (knowledge-driven)** financial forecasting and optimization systems.

Citations Scopus Count: 176 H-index: 7 Google Scholar Count: 304 H-index: 9

Books and Chapters

1. **Xing, F. Z.**; Cambria, E.; Welsch, R. E. (2019). Intelligent Asset Management. **Springer**. In Series "Socio-Affective Computing", ISBN: 978-3-030-30262-7.

Journal Papers

*Impact Factors (IF) are retrieved from the Clarivate Journal Citation Reports (JCR) of the publication year.

1. Ma, Y.; Nguyen, K. L.; **Xing, F. Z.**; and Cambria, E. (2020). A survey on empathetic dialogue systems. **Information Fusion**. 64, pp 50-70. **IF: 10.72**
2. **Xing, F. Z.**; Poria, S.; Cambria, E.; and Welsch, R. (2020). Social Media Marketing and Financial Forecasting. **Information Processing & Management**. 57(5), 102314. **IF: 3.89**
3. **Xing, F. Z.**; Cambria, E.; and Zhang, Y. (2019). Sentiment-Aware Volatility Forecasting. **Knowledge-Based Systems**. 176, pp 68-76. **IF: 5.10**
4. **Xing, F. Z.**; Cambria, E.; and Welsch, R. E. (2019). Growing semantic vines for robust asset allocation. **Knowledge-Based Systems**. 165, pp 297-305. **IF: 5.10**
5. **Xing, F. Z.**; Pallucchini, F.; and Cambria, E. (2019). Cognitive-Inspired Domain Adaptation of Sentiment Lexicons. **Information Processing & Management**. 56(3), pp 554-564. **IF: 3.89, Honorable Mentions**
6. Malandri, L.; **Xing, F. Z.**; Orsenigo, C.; Vercellis, C.; and Cambria, E. (2018). Public Mood-Driven Asset Allocation: the Importance of Financial Sentiment in Portfolio Management. **Cognitive Computation**. 10(6), pp 1167-1176. **IF: 4.29**
7. **Xing, F. Z.**; Cambria, E.; and Welsch, R.E. (2018). Intelligent Asset Allocation via Market Sentiment Views. **IEEE Computational Intelligence Magazine**. 13(4), pp 25-34. **IF: 6.61**
8. **Xing, F. Z.**; Cambria, E.; and Welsch, R.E. (2018). Natural language based financial forecasting: A survey. **Artificial Intelligence Review**. 50(1), pp 49-73. **IF: 5.10**

Conference Papers

1. **Xing, F.Z.**; Hoang, D.-H.; and Vo, D.-V. (2021). High-frequency news sentiment and its application to forex market prediction. **HICSS**. Online. **CORE: A**
2. **Xing, F.Z.**; Malandri, L.; Zhang, Y.; and Cambria, E. (2020). Financial sentiment analysis: An investigation into common mistakes and silver bullets. **COLING**. Online. **CORE: A**
3. Cambria, E.; Li, Y.; **Xing, F. Z.**, Poria, S.; and Kwok, K. (2020). SenticNet 6: Ensemble Application of Symbolic and Subsymbolic AI for Sentiment Analysis. **CIKM**. Online. **CORE: A**
4. Bai, H.; **Xing, F. Z.**; Cambria, E.; and Huang, W.-B. (2019). Business taxonomy construction using concept-level hierarchical clustering. **FinNLP@IJCAI**. Macao, China. **CORE: A**
5. **Xing, F. Z.**; Cambria, E.; Malandri, L.; and Vercellis, C. (2018). Discovering Bayesian Market Views for Intelligent Asset Allocation. **ECML-PKDD**. Dublin, Ireland. **CORE: A**
6. **Xing, F. Z.**; Cambria, E.; and Zou, X. (2017). Predicting evolving chaotic time series with fuzzy neural networks. **IJCNN**. Anchorage, USA. **CORE: A**
7. **Xing, F. Z.**; Ho, D; Hamzah, D; and Cambria, E. (2017). Classifying World Englishes from a lexical perspective: A corpus-based approach. **CICLing**. Budapest, Hungary. **CORE: B**
8. **Xing, F. Z.**; Cambria, E.; Huang, W.-B.; and Xu, Y. (2016). Weakly supervised semantic segmentation with superpixel embedding. **ICIP**. Phoenix, USA. **CORE: B**

9. Xing, F. Z. and Xu, Y. (2015). A logistic regression model of irony detection in Chinese internet texts. **CICLing**. Cairo, Egypt. **CORE: B**

Academic Service

Editorial Board	Journal of Artificial Intelligence and Systems (2019)
Journal Guest Editor	Sentiment Analysis as a Multidisciplinary Research Area, IEEE Trans. on AI (2021) Recommender Systems and Sentiment Analysis, Applied Soft Computing (2020) Social Media Marketing and Financial Forecasting, Info. Proc. & Mgmt. (2020)
Journal Reviewer	Information Fusion -Outstanding Contribution Award, Knowledge-Based Systems -Outstanding Contribution Award, Applied Intelligence, Artificial Intelligence Review, Cognitive Computation, Financial Innovation, IEEE Access, IEEE Transactions on Affective Computing, IEEE Computational Intelligence Magazine, Information Processing & Management, International Journal of Forecasting, International Journal of Information Technology & Decision Making, Journal of the Association for Information Science and Technology, Journal of King Saud University, MDPI Information, MDPI Electronics, Neurocomputing.
Conference Reviewer PC Member & Area Chair	AISTATS (2021) ECONLP (2021) HICSS (2021) IJCAI (2021) AAACL-IJCNLP (2020) COLING (2020) WISDOM Workshop @ KDD (2020) SENTIRE Workshop @ ICDM (2019, 2018, 2016) EMSASW Workshop @ ESWC (2018)
Professional Society Membership	INFORMS Information Systems Society (2020-2021) IEEE Computational Intelligence Society (2016-2017)

Invited Talks and Consultancy

Talk "Intelligent Asset Management and NLP" at CFE-CMStatistics Conference.	2020
Talk "Managing your Finances with AI" at Institute of Advanced Studies Webinar.	2020
Talk "Three interfaces between NLP and asset allocation" at Lund University.	2020
Talk "Stock market prediction meets uncertainty and high-dimension" at Westlake University.	2019
Talk "From informatization to intelligence" at Peking University.	2019
Talk "Semantics and graphical model" at Beijing Institute of Technology.	2019
Talk "Sentiment and sentiment time series" at Wuhan University of Technology.	2019

Attended "Machine Learning Decoded" discussion at Bloomberg Singapore L.P.	2018
Consultancy on building dialogue systems for Ice Kredit Co., Ltd.	2018
Consultancy on information extraction and NLP for Deloitte China Co., Ltd.	2018

Supervision and Teaching

Xiuyu Chen, Research Associate	2020
Filippo Pallucchini, Master Student	2018
NTU-CZ2002 Spring Course: Object Oriented Design & Programming (Java), Tutorial Instructor	2016
NTU-CZ4034 Spring Course: Introduction to Information Retrieval, Teaching Assistant	2016

Media Coverage

Fin-tech research reported by the well-known QIML WeChat Official Account	2018
NLP research mentioned by the famous tech news website Jiqizhixin.com	2018

Skills

Language	Native-level fluency in Chinese (Mandarin, Cantonese and Hokkien) Working-level fluency in English (speaking, reading, and writing)
Licence	Certificate for University Teaching, NTU Motor Vehicle Driving Licence (C1), PRC

Referees

Dr. Erik Cambria, cambria@ntu.edu.sg
Associate Professor & Provost Chair
School of Computer Science & Engineering, Nanyang Technological University, Singapore

Dr. Roy Welsch, rwelsch@mit.edu
Professor & CCREMS Director
Sloan School of Management, Massachusetts Institute of Technology, USA

Dr. Yue Zhang, yue.zhang@wias.org.cn
Associate Professor
Institute of Advanced Technology, Westlake University, China

Dr. Aixin Sun, axsun@ntu.edu.sg
Associate Professor & Assistant Chair (Academic)
School of Computer Science & Engineering, Nanyang Technological University, Singapore

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