Frank XING

Curriculum Vitae

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Career Highlights

- accumulated 10 years of experience and expertise in AI and business informatics
- authored a Springer book and 30+ peer-reviewed articles
- received 2900+ Google Scholar citations, h-index=20
- secured research fundings for 280K+ USD
- taught 10+ semesters of university courses

Professional Appointments

Associate Professor, Henley Business School, University of Reading — 2025 - now
Develop research agenda and courses in AI and Digital Business

Assistant Professor, School of Computing, National University of Singapore — 2021 - 2025
Spearheaded and mentored research on AI in finance and designed a new undergraduate course

Presidential Postdoctoral Fellow, Nanyang Technological University — 2019 - 2021
Honored with a competitive award and developed grant management skills and research independence

Machine Learning Specialist, Continental Automotive Singapore — 2018 - 2019
Acted as a tech lead and mentored innovation projects in machine learning

Academic Qualifications

PhD in Computing and Data Science, Nanyang Technological University — 2016 - 2019
Ranked #12 in QS World University Rankings 2026
Thesis: Textual knowledge integration for financial asset management

BSc in Information Systems / BA in Economics, Peking University — 2011 - 2015
Ranked #14 in QS World University Rankings 2026
Thesis: Weakly supervised image semantic segmentation with conditional random field

Research Publications

Number of citations

Web of Science	count: 1575	h-index: 14
Scopus	count: 1961	h-index: 16
Google Scholar	count: 2984	h-index: 20

Books and chapters

1. **Xing, F.**; Cambria, E.; Welsch, R. E. (2019). Intelligent Asset Management. *Springer International Publishing*. ISBN: 978-3-030-30262-7.

Referred journals

16. Wu, X.; Li, L.; Tao, X.; **Xing, F.**; and Yuan, J. (2025). Happiness prediction with domain knowledge integration and explanation consistency. *IEEE Transactions on Computational Social Systems*.

15. **Xing, F.**; Du K.; Mengaldo, G.; Cambria E.; and Welsch, R. (2025). AI reshaping financial modeling. *npj Artificial Intelligence*.
14. **Xing, F.** (2025). Designing heterogeneous LLM agents for financial sentiment analysis. *ACM Transactions on Management Information Systems*. 16(1), art 5, pp 1-24.
13. Du, K.; Zhao, Y.; Mao, R.; **Xing, F.**; and Cambria, E. (2025). A retrieval-augmented multi-agent system for financial sentiment analysis. *IEEE Intelligent Systems*. 40(2), pp 15-22.
12. Du, K.; Zhao, Y.; Mao, R.; **Xing, F.**; and Cambria, E. (2025). Natural language processing in finance: A survey. *Information Fusion*. 115, 102755.
11. Cesarini, M.; Malandri, L.; Pallu, F.; Seveso, A.; and **Xing, F.** (2024). Explainable AI for text classification: Lessons from a comprehensive evaluation of post hoc methods. *Cognitive Computation*. 16(6), pp 3077-3095.
10. Du, K.; **Xing, F.**; Mao, R.; and Cambria, E. (2024). Financial sentiment analysis: Techniques and applications. *ACM Computing Surveys*. 56(9), art 220, pp 1-42.
9. **Xing, F.** (2024). Financial risk tolerance profiling from text. *Information Processing & Management*. 61(4), 103704.
8. Du, K.; **Xing, F.**; and Cambria, E. (2023). Incorporating multiple knowledge sources for targeted aspect-based financial sentiment analysis. *ACM Transactions on Management Information Systems*. 14(3), art 23, pp 1-24.
7. Ma, Y.; Nguyen, K. L.; **Xing, F.**; and Cambria, E. (2020). A survey on empathetic dialogue systems. *Information Fusion*. 64, pp 50-70.
6. **Xing, F.**; Cambria, E.; and Zhang, Y. (2019). Sentiment-aware volatility forecasting. *Knowledge-Based Systems*. 176, pp 68-76.
5. **Xing, F.**; Cambria, E.; and Welsch, R. E. (2019). Growing semantic vines for robust asset allocation. *Knowledge-Based Systems*. 165, pp 297-305.
4. **Xing, F.**; Pallucchini, F.; and Cambria, E. (2019). Cognitive-inspired domain adaptation of sentiment lexicons. *Information Processing & Management*. 56(3), pp 554-564. *Honorable Mention for IP&M 2019 Best Paper Award*
3. Malandri, L.; **Xing, F.**; 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.
2. **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.
1. **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.

Referred conference papers

18. Du, K.; **Xing, F.**; Mao, R.; and Cambria, E. (2024). Explainable stock price movement prediction using contrastive learning. *CIKM*. Boise, USA.
17. Du, K.; Mao, R.; **Xing, F.**; and Cambria, E. (2024). A dynamic dual-graph neural network for stock price movement prediction. *IJCNN*. Yokohama, Japan.
16. Du, K.; **Xing, F.**; Mao, R.; and Cambria, E. (2024). An evaluation of reasoning capabilities of large language models in financial sentiment analysis. *IEEE CAI*. Singapore, Singapore.

15. Qi, Q. and Xing, F. (2023). Leveraging interactions for stationary and dynamic financial distress prediction: A spatio-temporal financial graph attention network. *ICIS*. Hyderabad, India.
14. Chen, S. and Xing, F. (2023). Understanding emojis for financial sentiment analysis. *ICIS*. Hyderabad, India.
13. Du K.; Xing, F.; Mao, R.; and Cambria, E. (2023). FinSenticNet: A Concept-Level Lexicon for Financial Sentiment Analysis. *SSCI*. Mexico City, Mexico.
12. Saha, J.; Patel, S.; Xing, F.; and Cambria, E. (2022). Does social media sentiment predict Bitcoin trading volume? *ICIS*. Copenhagen, Denmark.
11. Cambria, E.; Liu, Q.; Decherchi, S.; Xing, F.; and Kwok, K. (2022). SenticNet 7: A commonsense-based neuro-symbolic AI framework for explainable sentiment analysis. *LREC*. Marseille, France.
10. Young, T.; Xing, F.; Pandelea, V.; Ni, J.; and Cambria, E. (2022). Fusing task-oriented and open-domain dialogues in conversational agents. *AAAI*. Vancouver, Canada.
9. Xing, F.; Hoang, D.-H.; and Vo, D.-V. (2021). High-frequency news sentiment and its application to forex market prediction. *HICSS*. Online.
8. Xing, F.; Malandri, L.; Zhang, Y.; and Cambria, E. (2020). Financial sentiment analysis: An investigation into common mistakes and silver bullets. *COLING*. Online.
7. Cambria, E.; Li, Y.; Xing, F.; Poria, S.; and Kwok, K. (2020). SenticNet 6: Ensemble application of symbolic and subsymbolic AI for sentiment analysis. *CIKM*. Online.
6. Bai, H.; Xing, F.; Cambria, E.; and Huang, W.-B. (2019). Business taxonomy construction using concept-level hierarchical clustering. *FinNLP@IJCAI*. Macao, China.
5. Xing, F. Z.; Cambria, E.; Malandri, L.; and Vercellis, C. (2018). Discovering Bayesian market views for intelligent asset allocation. *ECML-PKDD*. Dublin, Ireland.
4. Xing, F. Z.; Cambria, E.; and Zou, X. (2017). Predicting evolving chaotic time series with fuzzy neural networks. *IJCNN*. Anchorage, USA.
3. 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.
2. Xing, F. Z.; Cambria, E.; Huang, W.-B.; and Xu, Y. (2016). Weakly supervised semantic segmentation with superpixel embedding. *ICIP*. Phoenix, USA.
1. Xing, F. Z. and Xu, Y. (2015). A logistic regression model of irony detection in Chinese internet texts. *CICLing*. Cairo, Egypt.

Guest editorials

4. Xing, F.; Schuller, B.; Chaturvedi, I.; Cambria, E.; and Hussain, A. (2023). Neurosymbolic AI for sentiment analysis. *IEEE Transactions on Affective Computing*. 14(3), pp 1711-1715.
3. Cambria, E.; Xing, F.; Thelwall, M.; and Welsch, R. (2022). Sentiment analysis as a multidisciplinary research area. *IEEE Transactions on Artificial Intelligence*. 3(5), pp 638-641.
2. Malandri, L.; Porcel, C.; Xing, F.; Serrano-Guerrero, J.; and Cambria, E. (2022). Soft computing for recommender systems and sentiment analysis. *Applied Soft Computing*. 118, 108246.
1. Xing, F.; Poria, S.; Cambria, E.; and Welsch, R. (2020). Social media marketing and financial forecasting. *Information Processing & Management*. 57(5), 102314.

Research Supervision

Student, program year, research title, and placement
K. Ong (2023- , PhD TAC), Explainable NLP for finance, -
K. Du (2022-2025, PhD co-advised), Financial sentiment analysis, DBS Bank
F. Pallucchini (2018-2019, MA), Domain adaptation of sentiment lexicons, Uni Milano-Bicocca
I. Koh (2023-2024, BComp), Predictive text analytics on Innofund grant applications, MS Precision
J. Sun (2023-2024, BComp), Modeling dependence structure of cryptocurrency returns, NUS
S. Chen (2022-2023, BComp), Effects of emojis in sentiment analysis, Bybit
T. Wee (2022-2023, BComp), Mapping ESG trends to identify investment opportunities, RSAF
Z. Lim (2022-2023, BComp), Building a multi-agent algo-trading system, GIC

Research assistant and placement
C. Wang (2023-2024), University of Connecticut
X. Chen (2020-2021), University of Hong Kong

Research Grants

Principle Investigator, Advancing Information-intensive Financial Modeling — 2021 - 2024
Singapore Ministry of Education, SGD 180,000

Principle Investigator, Innovative Approaches to Portfolio Optimization — 2019 - 2021
NTU Presidential Postdoctoral Fellowship Research Grant, SGD 200,000

Staff, Human-Robot Collaborative AI — 2019 - 2020
Singapore Ministry of Trade and Industry, SGD 21,634,800

Staff, Conti+ Service Chatbot — 2018 - 2018
Continental Internal R&D Project, EUR 30,070

Staff, Singlish Natural Language Processing — 2015 - 2018
Singapore Ministry of Defence, SGD 1,254,000

Principle Investigator, Irony Detection on the Internet — 2013 - 2014
PKU President's Undergraduate Research Fellowship, CNY 2,000

Invited Talks and Presentations

7. Financial sentiment analysis: An agentic-LLM approach
   University of Essex Research Seminar, Colchester, UK, Mar 2025
   University of Reading Research Seminar, Reading, UK, Nov 2024
6. Sustainability reporting: Behaviors, textual clues, and financial effects
   A*STAR Computational Intelligence Research Seminar, Singapore, Sep 2023
   NUS-DISA Summer Research Workshop, Singapore, Jul 2022
   University of Milano-Bicocca Research Seminar, Milan, Italy, Jun 2022
5. Financial sentiment analysis: A neurosymbolic approach
   University of Essex Research Seminar, Colchester, UK, Nov 2021
4. Financial sentiment analysis and sentiment time series
   Singapore Symposium on Sentiment Analysis, Singapore, Mar 2021
   Wuhan University of Technology Research Forum, Wuhan, China, Mar 2019
3. Three interfaces between NLP and asset allocation
   International Conference on Computational and Methodological Statistics, Virtual, Dec 2020
   Knut Wicksell Centre for Financial Studies Workshop, Lund, Sweden, Jan 2020

2. Managing your finances with AI
   NTU Institute of Advanced Studies Webinar, Virtual, May 2020

1. Stock market prediction meets data quality uncertainty and high-dimensionality
   Westlake University Research Seminar, Hangzhou, China, Oct 2019

Teaching

Training and qualifications	
Certificate in Case Teaching, Harvard Business Publishing Education	2025
Professional Development Programme (Teaching), National University of Singapore	2023
Certificate in University Teaching, Nanyang Technological University	2018

Course development
MQ3STG Strategic Governance: designed syllabus and learning materials
IS3107 Data Engineering: designed syllabus, lecture, and tutorial contents

Teaching experience and class size: National University of Singapore
2025S, BT4103 Business Analytics Capstone Project, 25
2024F, IS3107 Data Engineering, 58
2024S, BT4016 Risk Analytics for Financial Services, 117
2023F, IS3107 Data Engineering, 67
2023S, BT4016 Risk Analytics for Financial Services, 111
2022F, IS3107 Data Engineering, 55
2022S, IS3107 Data Engineering, 167
2021F, IS6000 Topics in Information Systems and Analytics Research, 11

Teaching experience and class size: Nanyang Technological University
2021S, CZ 4034 Introduction to Information Retrieval, 143
2016S, CZ 2002 Object Oriented Design & Programming in Java (TA), 32

Professional Services

Membership of learned societies	
Member, IEEE (Institute of Electrical and Electronics Engineers)	2016 - 2025
Member, AIS (Association for Information Systems)	2021 - 2025
Journal editorship	
Youth Editorial Board Member, Financial Innovation	2024 - 2026
Guest Editor, IEEE Transactions on Affective Computing	2023
Guest Editor, IEEE Transactions on Artificial Intelligence	2022
Conference chair and associate editor	
Associate Editor, Pacific Asia Conference on Information Systems (PACIS)	2024
Session Chair, International Conference on Computational Linguistics (COLING)	2020
Grant proposal reviewer	
The Czech Science Foundation: Standard & Lead Projects	2021 - 2024
Internal/external PhD examiner	
Imperial College London	2024
National University of Singapore	2022 - 2024
Administration: NUS School of Computing	
Member, Publication Ranking Committee	2021 - 2024