# Fangyu Lin

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## Education

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| **Doctor of Philosophy (PhD)** | **Major**: Management Information Systems<br>**Minor**: Cognitive Science | **University of Arizona** | **2018-2024** |
| **Master of Business Administration (MBA)** | Information Management | **National Taiwan University** | **2016-2018** |
| **Bachelor of Business Administration (BBA)** | Information Management | **National Sun Yat-sen University** | **2012-2016** |

## Research Interests

- Applications: Information Privacy, Privacy Policy, Personally Identifiable Information, Cybersecurity
- Methods: Machine Learning, Deep Learning, Text Mining, Data Mining

## Dissertation

**Title:** Artificial Intelligence-Enabled Information Privacy Analytics and Risk Assessment
**Committee Members:** Dr. Hsinchun Chen (Chair), Dr. Sue Brown (Co-chair), and Dr. Jay Nunamaker (Member)
**Dissertation Summary:** In an increasingly digitized world, the exchange and exposure of our personal information have become the norm. Consequently, safeguarding privacy has emerged as a pressing societal concern. Regrettably, many individuals remain oblivious to the entities collecting, processing, sharing, and utilizing their personal data. This lack of awareness creates an alarming vulnerability, enabling malicious actors to exploit exposed information for identity theft, abuse, and fraud. Addressing this critical issue demands innovative solutions that heighten awareness of information privacy risks, particularly among vulnerable populations like the elderly and teenagers, to empower proactive protective actions. Drawing upon the fusion of design science and the behavioral Information Systems paradigm, my research is dedicated to harnessing the power of artificial intelligence (AI), deep learning, and machine learning to analyze structured and unstructured privacy-related data from heterogeneous data sources to tackle pivotal questions in this domain:

- How can AI-enabled systems effectively analyze privacy policies, shedding light on online service providers' data practices?
- How can AI-enabled systems enhance privacy risk assessment, gauging individuals' susceptibility to data exposure across the Dark Web and Surface Web?
- How can AI-generated analysis results be skillfully harnessed to heighten individuals' awareness of information privacy risks?

## Publications

*Journal Papers*

- **Lin, F.**, Samtani, S., Zhu, H., Brandimarte, L., and Chen, H. (Forthcoming) "Automated Analysis of Changes in Privacy Policies: A Structured Self-Attentive Sentence Embedding Approach," *Management Information Systems Quarterly (MISQ)*.

*Refereed Conference Proceedings*

- Lin, F., Brandimarte, L., Brown, S., & Chen, H. (2024, May). Examining the Effect of Personalized PII Exposure Alerts on Individuals' Privacy Protection Motivation. In 2024 47th MIPRO ICT and Electronics Convention (MIPRO) (pp. 1350-1355). IEEE.
- Liu, Y., **Lin, F.**, Ebrahimi, M., Li, W., and Chen, H. 2021. "Automated PII Extraction from Social Media for Raising Privacy Awareness: A Deep Transfer Learning Approach," in *2021 IEEE International Conference on Intelligence and Security Informatics, ISI 2021*.
- **Lin, F.**, Li, Y., Ebrahimi, M., Ahmad-Post, Z., Hu, J. L., Xu, J., Samtani, S., Li, W., and Chen, H. 2020. "Linking Personally Identifiable Information from the Dark Web to the Surface Web: A Deep Entity Resolution Approach," in *2020 International Conference on Data Mining Workshops, ICDMW 2020*, pp. 488–495.
- Liu, Y., **Lin, F.**, Ahmad-Post, Z., Ebrahimi, M., Zhang, N., Hu, J. L., Xu, J., Li, W., and Chen, H. 2020. "Identifying, Collecting, and Monitoring Personally Identifiable Information: From the Dark Web to the Surface Web," in *2020 IEEE International Conference on Intelligence and Security Informatics, ISI 2020*.
- **Lin, F.**, Wu, M., and Chen, C. C. 2018. "Incorporating Pairwise Learning into Latent Dirichlet Allocation for Effective Item Recommendations," in *22nd Pacific Asia Conference on Information Systems - Opportunities and Challenges for the Digitized Society: Are We Ready?, PACIS 2018*.
- Chen, W., **Lin, F.**, and Ku, L. 2016. "WordForce: Visualizing Controversial Words in Debates," in *26th International Conference on Computational Linguistics, COLING 2016*.

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## Research and Scholarly Activities

*Assisting Grant Writing*

- **Grant Title**: Secure and Trustworthy Cyberspace (SaTC): CORE: Medium: Identifying, Linking, and Presenting Personally Identifiable Information from the Dark Web and Surface Web to Nudge Privacy Protecting Behaviors: A Multi-Disciplinary Deep Learning Perspective; **Year**: 2023; **Funding Source**: National Science Foundation (NSF); **Funding Amount**: $1.2M; **Status**: In Preparation.
- **Grant Title**: Disrupting Operations of Illicit Supply Networks (D-ISN): TRACK 1: Disrupting Illicit Dark Web Hacker Community Networks: An Explainable AI Approach; **Year**: 2020; **Funding Source**: National Science Foundation (NSF); **Funding Amount**: $1M; **Status**: Rejected

*Reviewer*

- Information Systems Research (ISR), 2024
- Workshop on Information Technologies and Systems (WITS), 2024
- Digital Threats: Research and Practice (DTRAP), 2024
- International Conference on Information Systems (ICIS), 2023
- Computers, Materials & Continua (CMC), 2023
- Pacific Asia Conference on Information Systems (PACIS), 2023
- Transactions on Management Information Systems (TMIS), 2022
- International Conference on Information Systems (ICIS), 2022
- International Conference on Information Systems (ICIS), 2021
- IEEE International Conference on Data Mining (ICDM) Workshop on Deep Learning for Cyber Threat Intelligence (DL-CTI), 2020
- 9th International Conference on Computational Data and Social Networks (CSoNet), 2020

## Awards and Honors

- Doctoral Consortium, Americas Conference on Information Systems (AMCIS), 2023.
- Nunamaker-Chen Doctoral Student Scholarship, The University of Arizona, 2019

## Teaching Experience

*University Courses – Instructor*

- **Course**: MIS 331: Database Management Systems; **Method**: In-person; **Semester**: Fall 2022; **# of Students**: 47; **Location**: University of Arizona; **Teaching Evaluation**: 4.8/5.0
- **Course**: MIS 111: Computers and Internetworked Society; **Method**: In-person; **Semester**: Summer 2022; **# of Students**: 24; **Location**: University of Arizona; **Teaching Evaluation**: 4.8/5.0

*University Courses – GTA*

- **Course**: MIS 615: Network Science: Theory and Applications; **Method**: In-person; **Semester**: Fall 2023; **# of Students**: 15; **Location**: University of Arizona
- **Course**: MIS 513: Business Foundations for IT; **Method**: In-person; **Semester**: Spring 2023; **# of Students**: 77; **Location**: University of Arizona
- **Course**: MIS 513: Business Foundations for IT; **Method**: In-person; **Semester**: Spring 2021; **# of Students**: 22; **Location**: University of Arizona
- **Course**: MIS 304: Using and Managing Information Systems; **Method**: In-person; **Semester**: Fall 2019; **# of Students**: 442; **Location**: University of Arizona
- **Course**: MIS 513: Business Foundations for IT; **Method**: In-person; **Semester**: Spring 2019; **# of Students**: 34; **Location**: University of Arizona

*External – Instructor*

- **Course:** Bootcamp for Artificial Intelligence (AI)-enabled Analytics – Recurrent Neural Network (RNN); **Method**: Online; **Semester**: Spring 2023; **# of Students**: 38; **Location**: National Taiwan University

## Work Experience

- **Job Title:** Graduate Research/Teaching Assistant; **Location:** University of Arizona; **Date:** August 2018 - Present
- **Job Title**: Intern/Research Assistant; **Division**: Natural Language, and Knowledge Processing Laboratory; **Location**: Academia Sinica; **Date**: Jul 2016 - Aug 2016

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- **Job Title**: Editor; **Division**: MIS Newsletter; **Location**: National Sun Yat-sen University; **Date**: Sept 2013 - June 2015

## Technical Skills

- **Program Languages:** C/C+, Java, Python, R, JavaScript, PHP
- **Databases:** Oracle, MySQL, MongoDB
- **Visualization:** Tableau
- **Data Mining Tools:** SPSS, smartPLS, scikit-learn
- **Deep Learning Modules:** TensorFlow, Keras, PyTorch
- **Operating Systems:** Linux (Ubuntu), Windows

## Professional References

1. **Hsinchun Chen, Ph.D. (Dissertation Committee Chair)**
   Regents' Professor
   Thomas R. Brown Chair of Management and Technology
   Director, Artificial Intelligence Laboratory
   Director, AZSecure Cybersecurity Fellowship Program
   Eller College of Management, The University of Arizona
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2. **Sue Brown, Ph.D. (Dissertation Committee Co-chair)**
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3. **Jay F. Nunamaker Jr., Ph.D. (Dissertation Committee Member)**
   Regents' Professor
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   Director, Center for the Management of Information
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