

Xiaodi Li

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Education

Department of Electrical and Computer Engineering, the University of Texas at Dallas	Richardson, TX
Ph.D. of Computer Science and Engineering	Aug. 2018 - Present
College of Mechanical Engineering, Donghua University	Shanghai, P.R.China
Bachelor of Mechanical Engineering	Jun. 2018
Graduation Thesis: <i>Detection and Extraction of Texture Defect Features on Leather Surface</i>	
Nominate for the Honor of Excellent Undergraduate Graduation Thesis	

Research Interests

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- ◆ My current research interests are **Artificial Intelligence, Machine Learning, and Natural Language Processing.**

Publications

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- ◆ **Xiaodi Li**, Md Delwar Hossain, Hideya Ochiai, and Latifur Khan. "[2MiCo: A Contrastive Semi-Supervised Method with Double Mixup for Smart Meter Modbus RS-485 Communication Security.](#)" In *2023 IEEE 9th Intl Conference on Big Data Security on Cloud (BigDataSecurity), IEEE Intl Conference on High Performance and Smart Computing,(HPSC) and IEEE Intl Conference on Intelligent Data and Security (IDS)*, pp. 30-39. IEEE, 2023.
 - ◆ **Xiaodi Li**, Zhuoyi Wang, Dingcheng Li, Latifur Khan, and Bhavani Thuraisingham. "[LPC: A Logits and Parameter Calibration Framework for Continual Learning.](#)" In *Findings of the Association for Computational Linguistics: EMNLP 2022*, pp. 7142-7155. 2022.
 - ◆ **Xiaodi Li**, Latifur Khan, Mahmoud Zamani, Shamila Wickramasuriya, Kevin W. Hamlen, and Bhavani Thuraisingham. "[MCoM: A Semi-Supervised Method for Imbalanced Tabular Security Data.](#)" In *Data and Applications Security and Privacy XXXVI: 36th Annual IFIP WG 11.3 Conference, DBSec 2022, Newark, NJ, USA, July 18–20, 2022, Proceedings*, pp. 48-67. Cham: Springer International Publishing, 2022.
 - ◆ Simin Chen, Soroush Bateni, Sampath Grandhi, **Xiaodi Li**, Cong Liu, and Wei Yang. "[DENAS: Automated Rule Generation by Knowledge Extraction from Neural Networks.](#)" *Proceedings of the 28th ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE)*, 2020. doi:10.1145/3368089.3409733.
 - ◆ Yueming Wu, **Xiaodi Li**, Deqing Zou, Wei Yang, Xin Zhang, and Hai Jin. "[MalScan: Fast Market-Wide Mobile Malware Scanning by Social-Network Centrality Analysis.](#)" *2019 34th IEEE/ACM International Conference on Automated Software Engineering (ASE)*, 2019. doi:10.1109/ase.2019.00023.
 - ◆ **Xiaodi Li**, Ping Deng, Ming Huang, Dingcheng Li, and Hongjun Wang. "[DP DETECTION: An Outlier Detection Algorithm Based on Density of Big Data.](#)" *Data Science and Knowledge Engineering for Sensing Decision Support*, 2018. doi:10.1142/9789813273238_0069.
 - ◆ Dingcheng Li, Ming Huang, **Xiaodi Li**, Yaoping Ruan, and Lixia Yao. "[MfeCNN: Mixture Feature Embedding Convolutional Neural Network for Data Mapping.](#)" *IEEE Transactions on NanoBioscience*17, no. 3 (2018): 165-71. doi:10.1109/tnb.2018.2841053.
 - ◆ Hao Wang, Liangxiong Wei, Ping Yuan, **Xiaodi Li**, Qian Luo, Xiao Luo, and Liangyin Chen. "[ODM: A Neighbor Discovery Protocol Based on Optimal Discovery Model in WSNs.](#)" *KSII Transactions on Internet*

and Information Systems 12, no. 10 (2018). doi:10.3837/tiis.2018.10.015.

- ◆ Dingcheng Li, Peini Liu, Ming Huang, Yu Gu, Yue Zhang, **Xiaodi Li**, Daniel Dean, Xiaoxi Liu, Jingmin Xu, Hui Lei, and Yaoping Ruan. "[Mapping Client Messages to a Unified Data Model with Mixture Feature Embedding Convolutional Neural Network.](#)" *2017 IEEE International Conference on Bioinformatics and Biomedicine (BIBM)*, 2017. doi:10.1109/bibm.2017.8217680.

Research Experience

Big Data Analytics and Management Lab, The University of Texas at Dallas	Richardson, TX
‘A New Semi-Supervised Learning Methodology on Tabular Security Data Sets’	<i>Mar. 2022 - Apr. 2022</i>
◆ Propose a novel triplet mixup data augmentation method that can reduce the data imbalance problem in large, sparsely labeled data sets	
◆ The first semi-supervised learning framework on tabular security data sets	
◆ Achieve state-of-the-art performance on all the experiments, which demonstrate the superiority of our proposed method for cybersecurity data domains	
‘A Logits and Parameter Calibration Framework on Continual Learning to Reduce Catastrophic Forgetting’	<i>Dec. 2020 - Jun. 2022</i>
◆ Propose a new continual learning framework LPC, which can reduce catastrophic forgetting effectively	
◆ Develop a new mechanism by calibrating the logits and parameters with target drifting from previous tasks to current tasks, thereby alleviating the catastrophic forgetting during the model updating	
◆ Combined with the existing regularization-based approach, our model achieves state-of-the-art performance while addressing the old knowledge forgetting without data storage	
Dallas Intelligent Software and Security Lab, The University of Texas at Dallas	Richardson, TX
‘Perform Android Malware Classification with a Lightweight Graph-based Approach’	<i>Jan. 2019 - Feb. 2019</i>
◆ Extract API and manifest features from downloaded APKs	
◆ Test the efficiency of the extracted features using SVM method	
Key Lab of Cloud Computing and Intelligent Technology, Southwest Jiaotong University	Chengdu, P.R.China
‘Detecting Abnormalities with DP (density peaks) Clustering Method’	<i>Sep. 2017 - Feb. 2018</i>
◆ Design a distribution method based on DP Algorithm to find abnormal points	
◆ Test our method with MATLAB using large scale of sparse dataset	
WSN Lab, Sichuan University	Chengdu, P.R.China
‘Mapping Client Messages to a Unified Data Model with MfcCNN’	<i>Dec. 2016 - Aug. 2017</i>
◆ Employ a tool named cTAKES (clinical Text Analysis Knowledge Extraction System) from Apache to extract multi-modal features from the input sentences	
◆ Create word embeddings for input features	
‘Improving Energy Efficiency of Neighbor Discovery in WSNs with ODM’	<i>2016 Summer</i>
◆ Do several derivations of formulas such as the general state expression, $M(c)$ and the number of Probe slots	
◆ Simulate our method in the dynamic case	

Work Experience

The University of Texas at Dallas	Richardson, TX
Research Assistant	<i>Aug. 2021 - Present</i>
◆ Assist research in the Big Data Analytics and Management Lab	
Teaching Assistant	<i>Aug. 2018 - Aug. 2021</i>
◆ Assist teaching for the following courses: Database System, Semantic Web, Introduction to Machine Learning, Data Structures and Introduction to Algorithmic Analysis, Computer Science II, and Machine Learning in Cyber Security	
Tektronix Company	Shanghai, P.R.China

Software Test Engineer Intern

Jul. 15th, 2015 - Aug. 25th, 2015

- ◆ Test the UI for the main software system of the company; record errors occurred during the test; write test reports and send them to software design engineers

Shanghai Aircraft Manufacturing Factory, Roewe Group Shanghai Base Port, and China International Industrial Expo **Shanghai, P.R.China**

Cognition Practice

2014 - 2015

Leadership Experience

The Future of Illusion - Robot Community of Donghua University

Shanghai, P.R.China

Vice-Chairman

Mar. 2015 - Nov. 2015

The Future of Illusion - Robot Community of Donghua University

Shanghai, P.R.China

Propaganda Department Minister

Sep. 2014 - Mar. 2015

Honors & Awards

The Excellence in Education Foundation Doctoral Fellowship, the University of Texas at Dallas

Richardson, TX

2023-2024 academic year

Apr. 10th, 2023

The Louis Beecherl, Jr. Graduate Fellowship, the University of Texas at Dallas

Richardson, TX

2021-2022 academic year

Jul. 1st, 2021

Volunteer Work

ACM CODASPY 2019

Dallas, TX

Volunteer

Mar. 25th, 2019 - Mar. 27th, 2019

The Third Session of the Original Music Contest of Shanghai College Students

Shanghai, P.R.China

Volunteer

Oct. 21st, 2014

The First Session of Chinese Robot Tourism Competition

Shanghai, P.R.China

Volunteer

May. 12th, 2014

Skills/Interests

Programming Languages: Python, JAVA, C/C#/C++, SQL, HTML, XML, JavaScript, CSS, Assembly Language, and Matlab

Languages: Chinese (native) and English (proficient)

Interests: Thinking, Reading, and Writing; Fitness; and Playing Guitar