Jie Hou

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Research interests	Cyber security, Machine Learning, Artificial Intelligence ,Adversarial Machine Learning

Education

University of Edinburgh   Edinburgh, UK
MSc in Cyber security privacy and trust   09 2022 – 11 2023
Mentors: Prof.Marc Juarez, Dr.Abdallah Sobehy(Amazon) *GPA:*

Lanzhou University   Lanzhou, China
BEng in Information security   09 2017 – 06 2021
Mentors: Prof. Xiaowei Zhang *GPA: 3.25*

Honors and scholarships

Third-class Excellence Scholarship of Lanzhou University   2018
Third-class Student Bonus Grant of Lanzhou University   2018

Publications

Community Detection Using Revised Medoid-Shift Based on KNN
Jiakang Li, Xiaokang Peng, **Jie Hou**(co-first author), Wei Ke , Yonggang Lu.
International Conference on Intelligent Computing, 2023.

Propensity Score Matching on Discrete Treatment: Beijing Pm2.5 Case Study
Jie Hou(co-first author), Shaofei Shen, Jing Han, Siqi Xu,Yijing Liu
International Conference on Machine Vision and Applications, 2022.

Research experience

Research on the Improvement of meanshift Algorithm and knn Algorithm
Mentors: Prof.Yonggang Lu(Lanzhou University)   09 2022 – Present
Improved the traditional meanshift algorithm with knn algorithm to make it based on distance matrix and knn.
Our work("Community Detection Using Revised Medoid-Shift Based on KNN") has been published in ICIC2023 and also recommended to Neurocomputing

Research on spatial structure and cooperation based on prisoner's dilemma
Mentors: Dr.Changyan Di (Lanzhou University)   07 2022 – 09 2022
Build a prisoner's dilemma space model using Q-learning strategies and evolutionary methods.

Research on automated identification of malicious entities on graphs structures

Mentors: Prof.Marc Juarez(UoE), Dr.Sobehy(Amazon)   03 2023 – 08 2023
Research on anomalies in graph structures, introducing the strategy of contrastive learning into graph neural networks. Additionally, a graph-structured dataset was generated based on the CIC-DNS dataset.

SHDoS Attack Detection based on Convolutional Neural Network
Mentors: Prof.Xiaowei Zhang (Lanzhou University)   10 2020 – 06 2021
Combined machine learning with DDoS attack detection. Built a convolutional neural network model to classify LDoS attack traffic and normal network traffic, compared it horizontally with other algorithms. Obtained a better understanding of the principles of LDoS attacks and the characteristics of attack traffic

Teaching experience   **Teaching assistant, School of Physical Science and Technology (Lanzhou University)**   Fall 2019 & Fall 2020
304402001: Foundations of Computational Physics
Responsible for addressing students' questions during laboratory sessions, primarily covering basic C programming, Linux operating system commands, and data structures. Additionally, responsible for grading students' coursework.

Teaching assistant, School of Information Science & Engineering (Lanzhou University)   Summer 2020
Summer school
Responsible for addressing students' questions during laboratory sessions, focusing primarily on topics such as data structures and C language programming. Additionally, responsible for grading students' coursework, designing and grading final exam papers, and invigilating during final exams.

Industry experience   **NSFOCUS,** Threat Intellgence lab   Beijing, China
Research Intern   01 2022-07 2022
Participated in the company's IPv6 probing direction research project, which focuses on predicting the structure of active IPv6 addresses. Throughout the project, I participated in the analysis of the composition structure of IPv6 addresses and conducted research on the corresponding generation algorithms according to different generation methods of IPv6 addresses.

Lanzhou University, Network Security and Information Office   Lanzhou, China
Intern   Summer 2021
Assisted with the construction, test, operation and maintenance of the Jump Server, learned to build a Jump Server from scratch, analyzed the logic of some source code in the test process.

Monitored the traffic, report risky behaviors, and trace the attacks as the defensive side in the network protection action of Lanzhou City; enriched knowledge about network attack and defense

Skills

Programming
Proficient in: Python
Familiar with: C, C++, PHP

Languages
Chinese (Native speaker of), English (Fluent in)

Other interests

Gym, Lego, basketball, swimming etc.