LU ZHANG

EDUCATION

\bullet Georgia State University, USA

Aug 2024 - Present

PhD student in Computer Science

• Hanyang University, South Korea

2023

Master's Degree in Applied AI

Thesis: Detection and Measurement of Illicit Promotional Content on Chinese TikTok

• Dankook University, South Korea

2021

Bachelor's Degree in Software Science

Thesis: A Deep Learning-Based Method for Enhancing Instagram Influencer Advertising

RESEARCH INTERESTS

AI for Online Safety, Computational Social Science, Social Media Analysis

PROFESSIONAL EXPERIENCE

• Graduate Assistant

Dept. of Computer Science at Georgia State University, USA

Aug 2024 - Present

• AI Specialist

Jan 2024 - Aug 2024

Research Team at Globit Co., Ltd, South Korea

• Data Science for Social Good fellow

Jun 2023 - Aug 2023

Data Science for Social Good fellowship at the University of Warwick, UK

• Research Assistant

Feb 2021 - Aug 2023

AI-Cybersecurity Lab at Hanyang University, South Korea

SELECTED PROJECTS

- Analyzing Patterns in Pro-China and Anti-China Propagation on Social Media Aug 2024 Present
 - Conducting a systematic analysis of interaction and propagation patterns in pro- and anti-China social media
 posts and users, revealing structural dynamics that inform strategies for managing polarized discourse online
- AI-Supported Smart Aquaculture System

Dec 2023 - Aug 2024

- Constructed a Siamese Neural Network-based pipeline to identify flounder individuals in fishing farms using CCTV cameras, achieving a 95% F1-score
- Visualized the geographic and weather data. Developed a machine learning-based system for salinity percentage prediction of ocean fish farms with sensors' data, geographic data, and weather data.
- Developed an ensemble learning-based time series data forecasting pipeline to forecast fish weight growth
 with weather data and fish farm historical records
- Developed an optimal fish feed quantity calculation system
- Identify Greenwashing Posts on Social Media [Poster]

Jun 2023 - Sep 2023

- Constructed a pipeline for preprocessing, training, experimentation, and inference based on the data provided by stakeholders
- Made image and text classifiers to identify Green Messaging (F1-score: 0.79 and 0.83) of posts on mainstream social media platforms
- Calculated the potential of companies engaging in Greenwashing
- Detect&Measure Illicit Promotion on Chinese Short Video Platforms [Slides] Apr 2022 May 2023

- Crawled 100k+ posts with meta data from Chinese TikTok
- Case study of illicit content
- Qualitative analysis with creating a qualitative codebook and conducting expert interviews for ascertaining illicit jargon characteristics and data labeling strategies
- Built a hybrid mechanism to detect (F1-score = 0.90), measure, and mitigate posts with Illicit Promotional Content on Chinese TikTok

• Deep Learning-Supported Tympanic Membrane Diagnosis

Aug 2021 - Mar 2022

- Conducted preliminary research and pilot study; discussed with physicians from Korea University Ansan Hospital to clarify particular tasks and feature selection
- Segmented the boundary of eardrum images with U-Net
- Classified eardrum images by 3 diseases with EfficientNet

AWARDS

FellowshipData Science for Social Good @ University of Warwick2023Travel GrantDAAD (German Academic Exchange Service) Data Science Summer School @ Heidelberg2022FellowshipBrain Korea 21 (BK21) program for Leading Universities and Students2021

PUBLICATIONS

- Lu Zhang, Sungbin Park, Zuobin Xiong, Junggab Son, and Yeonjoon Lee. "Understanding Illicit Promotional Contents on Short Video Platforms", To appear in *Tsinghua Science and Technology*, 2025 (SCIE Q1, Impact Factor: 5.2)
- Lu Zhang, Yeonjoon Lee. "Detection Techniques for Chinese Jargon: A Survey", The Korean Institutes of Communications and Information Sciences (KICS) Winter Conference 2023
- Lu Zhang, Yeonjoon Lee. "Stealthy and Seductive: A Survey on Online Illicit Promotion", Conference on Information Security and Cryptography-Summer 2022 (CISC-S'22)
- Lu Zhang, Hoon Ji, Yeonjoon Lee. "A Survey on Deep Learning-based Eardrum Segmentation", 2022 International Conference on Electronics, Information, and Communication (ICEIC 2022)

SERVICES&VOLUNTEERING

• Teaching Assistant
CSC 4780 - Fundamentals of Data Science

• Reviewer 2024

The International AAAI Conference on Web and Social Media (ICWSM) '25

• Member&Freshman Mentor

March 2019 - Jan 2021

Dankook University International Student Association

TECHNICAL SKILLS

Programming Languages Python, Shell Script, JavaScript

Tools Git, Docker, LaTeX, Tableau, Weights&Biases, MySQL, CSS, HTML

AI-Related Frameworks Pandas, Numpy, PyTorch, OpenCV, Scikit-learn, Hugging Face, NLTK, Gensim,

SpaCy, AutoML, Matplotlib, Seaborn...

Automations Crawler, Pyspider, Scrapy, Selenium, Pytest, PyAutoGUI

Domain Knowledge Greenwashing, Social Media, Darknet, Deep Web, Cybercrime

Natural Languages Chinese (Native), English (C1), Korean (B2)

Updated: Friday3rd January, 2025

2024