# LU ZHANG

#### **EDUCATION**

# • 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, Usable Security, Computational Social Science, Social Media Analysis

#### PROFESSIONAL EXPERIENCE

## • Graduate Teaching Assistant

Aug 2024 - Present

Dept. of Computer Science at Georgia State University, USA

# • 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

## • Graduate Research Assistant

Feb 2021 - Aug 2023

AI-Cybersecurity Lab at Hanvang University, South Korea

### **AWARDS**

Fellowship Data Science for Social Good @ University of Warwick

2023

Travel Grant DAAD (German Academic Exchange Service) Data Science Summer School @ Heidelberg 2022 Scholarship Korean Government Brain 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)

### **PROJECTS**

- Analyzing Patterns in Pro-China and Anti-China Propagation on Social Media Aug 2024 Present
  - Using multimodal models to analyze Sinophobia-related online content

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 geographic and weather data and developed a machine learning-based system to predict salinity
  percentages in ocean fish farms using sensor, geographic, 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 = 90.7%), 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

## SERVICES&VOLUNTEERING

• Teaching Assistant

CSC 1302 - Principles of Computer Science II

CSC 4780 - Fundamentals of Data Science

Spring 2025

Fall 2024

• Reviewer

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

2024

• 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, NetworkX, PyG                         |
| Automations           | Crawler, Pyspider, Scrapy, Selenium, Pytest, PyAutoGUI                    |
| Domain Knowledge      | Social Media, Darknet, Deep Web, Cybercrime, Greenwashing, Ocean Fishery  |
| Natural Languages     | Chinese (Native), English (C1), Korean (B2)                               |