

# LU ZHANG

+82 1034679527 <https://anhzhang1994.github.io/> zhanglu1913@gmail.com

## EDUCATION

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- **Hanyang University, South Korea** Mar 2021 - Aug 2023  
Master's Degree in Applied AI  
GPA: 3.95/4.5  
Thesis: Detection and Measurement of Illicit Promotional Content on Chinese TikTok
- **Dankook University, South Korea** Mar 2019 - Feb 2021  
Bachelor's Degree in Software Science  
GPA: 3.41/4.5  
Thesis: A Deep Learning-Based Method for Enhancing Instagram Influencer Advertising
- **Cheju Halla University, South Korea** (Joint Program with Hefei University, China) Sep 2014 - Aug 2017  
Associate Degree in Computer Technology  
GPA: 3.57/4.5

## RESEARCH INTERESTS

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

## PROFESSIONAL EXPERIENCE

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- **Machine Learning Engineer** Jan 2024 - Present  
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

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- **AI-Supported Smart Aquaculture System** Dec 2023 - Present
  - Constructed a deep learning-based pipeline to identify flounder individuals in fishing farms using CCTV cameras and enabling re-identification from consumers' side with a phone camera, achieving a 95% F1-score (Diffusion Model for water removal and Siamese Neural Network for re-identification)
  - Visualized the geographic and weather data. Constructing a machine learning-based system for salinity percentage prediction of ocean fish farms with sensors' data, geographic data, and weather data.
  - Constructing a machine learning-based time series data forecasting pipeline to forecast fish weight growth with weather data and fish farm historical records
- **Investigate 'Insulting China'-Related Content on Chinese Social Media** Oct 2023 - Present
  - Conducting preliminary experiments with vision&language models for analyzing 'Insulting China' patterns
  - Writing a literature review of computer-supported technologies on related memes
  - Built a crawler to scrape related contents on Chinese mainstream social platforms (Weibo, Douban, Tieba, Douyin)
- **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

## TECHNICAL SKILLS

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<b>Programming Languages</b>	Python, Shell Script, JavaScript
<b>Tools</b>	Git, Docker, LaTeX, Tableau, Weights&Biases, MySQL, CSS, HTML
<b>AI-Related Frameworks</b>	Pandas, Numpy, PyTorch, OpenCV, Scikit-learn, Hugging Face, NLTK, Gensim, SpaCy, AutoML, Matplotlib, Seaborn...
<b>Automations</b>	Crawler, Pyspider, Scrapy, Selenium, Pytest, PyAutoGUI
<b>Natural Languages</b>	Chinese (Native), English (C1), Korean (B2)

## AWARDS

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<b>Fellowship</b>	Data Science for Social Good @ University of Warwick	2023
<b>2nd Prize</b>	Three Minute Thesis (3MT <sup>®</sup> ) Competition @ Hanyang University	2023
<b>Travel Grant</b>	DAAD (German Academic Exchange Service) Data Science Summer School @ Heidelberg	2022
<b>Excellence Prize</b>	ERICA English Essay Contest @ Hanyang University	2022
<b>Distinction Prize</b>	ERICA English Essay Contest @ Hanyang University	2021
<b>Fellowship</b>	Brain Korea 21 (BK21) program for Leading Universities and Students	2021

## PUBLICATIONS

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- **Lu Zhang**, et al. Understanding Illicit Promotional Content on Chinese TikTok, *In Submission*
- **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)*

## VOLUNTEERING

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- **Member&Freshman Mentor** March 2019 - Jan 2021  
Dankook University International Student Association