

YIMENG GU

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EDUCATION

Queen Mary University of London

Ph.D. in Computer Science

Advisor(s): Prof. Gareth Tyson

London, UK

Sept 2021 - June 2025 *expected*

Carnegie Mellon University

M.S. in Electrical and Computer Engineering

Pittsburgh, PA, USA

Aug 2020 - Aug 2021

The Hong Kong University of Science and Technology

MSc. in Big Data Technology

Hong Kong, China

Sept 2019 - June 2020

Beihang University

B.E. in Electronics Information Engineering

Shenyuan Honors College (top 50/3000+)

Beijing, China

Sept 2014 - June 2018

RESEARCH EXPERIENCE

Queen Mary University of London | PhD Student

Advisor: Prof. Gareth Tyson

Project: Multi-MLLM Knowledge Distillation for Out-of-Context News Detection

London, UK

Sept 2021 - *present*

- Designed chain-of-thought (CoT) prompt to obtain label predictions and rationales from multiple 70B teacher MLLMs for out-of-context news detection
- Distilled knowledge from multiple teacher MLLMs to a 7B student MLLM using LoRA Finetuning and DPO
- Improved detection performance by 1.8% with 10x fewer parameters and only 10% labeled data

Project: Contrastive Domain Adaptation with Test-Time Training for Out-of-Context News Detection

- First to explore domain adaptation in out-of-context news detection
- Proposed a novel approach combining contrastive learning and Maximum Mean Discrepancy (MMD) to learn domain-invariant features across limited domains
- Integrated Test-Time Training for target domain adaptation, resulting in a 2.6% performance improvement on benchmark datasets

Project: Detecting Multimodal Fake News with Gated Variational AutoEncoder

- Conducted pilot experiments revealing that different modalities in social media news carry varying levels of noise
- Designed unimodal, multimodal, and reinforcement learning-based gates to dynamically filter noisy information
- Proposed a gated multimodal VAE framework for robust news representation learning, achieving a 3.7% performance improvement on benchmark datasets

WORK EXPERIENCE

Autodesk Research | Research Intern in AI Lab

Topic: Identifying Mechanisms in Fusion360 Assemblies

London, UK

Jun 2023 - Sept 2023

- Introduced a part-graph representation leveraging CLIP-based multi-view image encoding and TSP-guided embedding ordering
- Proposed an AutoEncoder-latent GAN framework to learn the distribution of surrounding parts conditioned on a central part within assemblies

- Designed both quantitative (IoU) and qualitative evaluation metrics; model outperformed baseline by 3% IoU in predicting neighbors for unseen parts

IFLYTEK Group | AI Research Intern

Beijing, China

Topic: Natural Language Processing with Legal Texts

Oct 2018 - Apr 2019

- Annotated 360+ Chinese labor contract data to locate the target information: *job position*, *job location*, *job description* and *part-time/full-time*
- Applied R-Net (reading comprehension) and BiLSTM-CRF (NER) models, achieving over 50% improvement in Exact Match and Accuracy
- Performed detailed error analysis to understand the trade-offs between span extraction and sequence labeling in legal text processing

SELECTED PUBLICATIONS

1. Multi-MLLM Knowledge Distillation for Out-of-Context News Detection
Yimeng Gu, Zhao Tong, Ignacio Castro, Shu Wu, Gareth Tyson
Under Submission, 2025
2. Generate First, Then Sample: Enhancing Fake News Detection with LLM-Augmented Reinforced Sampling
Zhao Tong, **Yimeng Gu**, Huidong Liu, Qiang Liu, Shu Wu, Haichao Shi, Xiao-Yu Zhang
In *ACL*, 2025
3. R²FND: Reinforced Rationale Learning for Fake News Detection with LLMs
Zhao Tong, **Yimeng Gu**, Qiang Liu, Haichao Shi, Shu Wu, Xiao-Yu Zhang
In *IJCNN*, 2025
4. Contrastive Domain Adaptation with Test-time Training for Out-of-Context News Detection
Yimeng Gu, Mengqi Zhang, Ignacio Castro, Shu Wu, Gareth Tyson
In *Pattern Recognition*, 2025
5. GatedVAE: Detecting Multimodal Fake News with Gated Variational AutoEncoder
Yimeng Gu, Ignacio Castro, Gareth Tyson
In *ACM Web Science*, 2024
6. MMVAE at SemEval-2022 Task 5: A Multi-modal Multi-task VAE on Misogynous Meme Detection
Yimeng Gu, Ignacio Castro, Gareth Tyson
In *NAACL SemEval Workshop*, 2022

HONORS AND AWARDS

- ACM WebSci'24 Travel Grant Apr 2024
- HKUST MSc (BDT) Excellent Student Scholarship 2019 (Top 7%) Apr 2020
- Excellent Undergraduate in Beihang University June 2018
- Second Prize in Fengru Cup of Science and Technology Competition in Beihang University (Top 15%) May 2017
- Honorable Mention in COMAP's Mathematical Contest in Modeling Apr 2016

LANGUAGE AND SKILLS

Computer/Technical	Python, Java, C/C++, Spark, SQL, git, gradle, IntelliJ IDEA, PyCharm, AWS, Azure, VS Code, Hadoop, Spark, AutoCAD, JUnit, Travis CI
Deep Learning	Pytorch, Tensorflow, HuggingFace, (M)LLMs, vLLM, LoRA FT, SFT, LMDeploy, Prompt Engineering
Language	English (fluent), Mandarin (native)