

TIANDA SUN

PhD Candidate in Computer Science | Natural Language Understanding & LLM Reasoning

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PROFESSIONAL SUMMARY

Final-year PhD researcher specializing in NLU, LLM reasoning, and benchmark development. Created KinshipQA, a contamination-proof benchmark for evaluating multi-hop reasoning across culturally diverse contexts. Developed KGEIR framework integrating knowledge graphs with iterative LLM reasoning, achieving state-of-the-art results on standard QA benchmarks. Strong publication record with open-source contributions and reproducible research methodologies.

RESEARCH INTERESTS

Large Language Model Reasoning • Multi-hop Question Answering • Knowledge Graph Construction & Reasoning • Retrieval-Augmented Generation (RAG) • Natural Language Understanding • Benchmark Development & Evaluation • Explainable AI • Cross-cultural NLP Evaluation

EDUCATION

Ph.D. in Computer Science — University of York, UK

Sep 2022 – Present | Expected Graduation: Dec 2026

- Thesis: Knowledge Graph-Guided Reasoning in Large Language Models: Towards Interpretable Question Answering
- Focus: Multi-hop reasoning, knowledge graph integration, benchmark development, cross-cultural NLP evaluation
- Supervisor: Dr. Dimitar Kazakov

M.Res. in Computer Science — University of York, UK (Sep 2021 – Sep 2022)

- Thesis: Relation Extraction in Financial Reports using Distant Supervision with BERT and PCNN

M.Sc. in Advanced Computer Science — University of Liverpool, UK (2017–2018)

B.Sc. in Software Engineering — Tianjin Polytechnic University, China (2011–2015)

PUBLICATIONS

Tianda Sun, Dimitar Kazakov. "Kinship Data Benchmark for Multi-hop Reasoning."

Under Review at ACL 2026 | [arXiv:2601.07794](#) | [Code](#)

Introduced KinshipQA, a contamination-proof benchmark evaluating LLM multi-hop reasoning across 7 culturally diverse kinship systems. Evaluated 6 state-of-the-art LLMs on 3,134 questions with controlled reasoning complexity (1-4 hops).

Tianda Sun, Dimitar Kazakov. "KGEIR: Knowledge Graph-Enhanced Iterative Reasoning for Multi-Hop Question Answering."

RANLP 2025 Workshop (R2LM), Varna, Bulgaria | [Code](#)

Proposed framework combining LLM reasoning with dynamic knowledge graph construction. Achieved competitive/superior performance on HotpotQA, 2WikiMultiHopQA, and MuSiQue benchmarks vs. state-of-the-art RAG methods.

Tianda Sun, Jamie Carr, Dimitar Kazakov. "A Hybrid Question Answering Model with Ontological Integration for Environmental Information."

DAO-XAI 2024 @ ECAI, Santiago de Compostela, Spain

Nunung Nurul Qomariyah, Tianda Sun, Dimitar Kazakov. "NLP Analysis of COVID-19 Radiology Reports in Indonesian using IndoBERT."

IEEE IBIOMED 2022 (British Council Newton Fund)

RESEARCH EXPERIENCE

PhD Research: Knowledge Graph-Guided LLM Reasoning | University of York (2022–Present)

- Designed contamination-proof evaluation methodology for LLM reasoning, ensuring zero data leakage across 6 state-of-the-art models with reproducible protocols
- Created KinshipQA benchmark with systematic complexity control (1-4 hop reasoning chains), enabling fine-grained analysis of LLM reasoning capabilities
- Developed KGEIR framework integrating dynamic knowledge graph construction with iterative LLM reasoning, achieving 4.5% F1 improvement over Tree-of-Thought baseline
- Built automated pipeline for culture-specific data generation using RDF/OWL ontologies, demonstrating cross-cultural NLP evaluation methodology
- Released open-source codebases with comprehensive documentation for reproducible research ([KinshipQA](#), KGEIR)
- Evaluated GPT-4o, Claude-3.5, Gemini-2.5, Qwen3, Gemma3, DeepSeek-R1 under uniform zero-shot protocol with deterministic decoding

MRes Research: Financial Relation Extraction | University of York (2021–2022)

- Implemented distant supervision approach using FIBO ontology for automatic training data generation
- Compared BERT and PCNN architectures for relation extraction, analyzing transformer vs. CNN performance

TECHNICAL SKILLS

Programming: Python (expert – NumPy, Pandas, SciPy), Java, SQL, Bash, C++ (basic)

ML/DL Frameworks: PyTorch, HuggingFace Transformers, scikit-learn, LangChain

NLP & Knowledge Graphs: SPARQL, RDF/OWL, Neo4j, NLTK, spaCy, OpenNRE, Transformers (BERT, GPT, T5)

LLM Tools: OpenAI API, Anthropic Claude API, Google Gemini API, Ollama, LangChain

Infrastructure: Linux, Git, Docker, HPC clusters, Jupyter, VS Code

OPEN SOURCE CONTRIBUTIONS

- [KinshipQA Benchmark](#): Publicly released benchmark with 3,134 questions, evaluation scripts, and documentation
- [KGEIR Framework](#): Open-source implementation of knowledge graph-enhanced reasoning with reproducible experiments

TEACHING EXPERIENCE

Graduate Teaching Assistant — University of York (2022–2025)

- DEEP: Deep Learning and Evolution of AI Paradigms – Practical sessions on neural network implementation
- EVAC: Evaluating and Validating AI Claims – Critical analysis of AI research methodology

REFERENCES

Dr. Dimitar Kazakov (PhD Supervisor)

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