Christos Theodoropoulos, PhD

AI Solution Architect at Qity | Employeneur at TMC
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Professional Statement - Summary

Purpose-driven AI Solutions Architect laying the foundations for AI-driven solutions, lending a hand to life science. Previously, Senior Data Scientist improving the way electronic health records are managed. Results-driven PhD researcher at KU Leuven specializing in Natural Language Processing and Knowledge Extraction focused on the biomedical domain, leveraging a background as a Research Scientist Intern at IBM Research, where I contributed to advancements in Person-Centric Knowledge Graphs, filed a patent, and pioneered an open-source research project. Accomplished Machine Learning Engineer with the I-SENSE Group, leading a pivotal role in a Computer Vision project centered on eye tracking and object detection. Proven expertise as a Data Scientist at a tech startup in life sciences, specializing in signal processing, feature selection, and signal reconstruction. A fast learner with a keen appetite for exploring, I thrive in challenging environments and desire to engage in purposeful projects. My personal and collaborative growth mindset positions me as an adaptable professional, ready to tackle complex challenges.

Professional and Research Experience

AI Solution Architect Jul. 2025 – Present
Qity *Erpe-Mere, Belgium, Hybrid*
- Lead the development of Generative AI-driven applications in Atlassian ecosystem and beyond.
- Design and optimize dynamic prompt assembly and chaining for improved monitored AI performance.
- Build and maintain knowledge graphs, implementing RAG tools to enable intelligent information retrieval and contextual AI reasoning.
- Continuously improve AI-driven workflows, conduct testing, and validate models to ensure robustness and reliability.

Employeneur Jul. 2025 – Present
TMC *Zaventem, Belgium, Hybrid*
- Deliver high-impact technical solutions for clients, maintaining a personal development plan supported by training and travel budget.
- Manage projects end-to-end — from initial requirements and design through implementation, testing, and delivery.
- Combine technical excellence with an entrepreneurial mindset to foster both personal growth and client success.

Scientific Expert Oct. 2025 – Jan. 2026
European Commission *Brussels, Belgium, Contract*
- Appointed by the Research Executive Agency (REA), under the authority of the European Commission, to serve as Scientific Expert.
- Conducted in-depth scientific and technical evaluations of five research proposals submitted to the Horizon Europe funding program.
- Contributed to consensus meetings with fellow experts to align assessments and finalize funding recommendations.

Senior Data Scientist Jan. 2025 – Jul. 2025
EarlyTracks *Brussels, Belgium, Hybrid*
- Apply multi-lingual Natural Language Processing solutions to process and analyze diverse healthcare data.
- Implement Named Entity Recognition and Linking approaches to extract medical information and link it to medical terminologies.
- Develop Relation Extraction models to identify relationships within the data, improving the semantic understanding of medical records.
- Leverage Large Language Models (LLMs) for deep learning-based understanding and processing of healthcare content. (Agentic AI)
- Collaborate with cross-functional teams to design scalable robust solutions that meet the real-world needs of healthcare professionals.

Doctoral Researcher Sep. 2020 – Dec. 2024
LIIR, KU Leuven *Leuven, Belgium*
- Researched in Information Extraction, Knowledge Discovery, and Entity-Centric Knowledge Graphs focused on the biomedical domain.
- Developed an end-to-end open-sourced paradigm enhancing Knowledge Discovery for diseases from biomedical publications.
- Implemented a framework using the Contrastive Learning paradigm, incorporating knowledge graphs and unstructured text.
- Taught exercises and prepared capstone project, as Teaching Assistant and supervised two research-oriented master theses.
- Participated in OxML summer schools on health/generative AI and representation learning, organized by AI for Global Goals in collaboration with CIFAR and the University of Oxford.

Research Scientist Intern Jul. 2022 – Nov. 2022
IBM Research *Dublin, Ireland*
- Researched Person-Centric Knowledge Graph Extraction from Electronic Health Records, incorporating structured/unstructured data.
- Applied Graph Neural Network (GNN) training for solving Intensive Care Unit readmission prediction.
- Experimented with embedding learning for heterogeneous graphs utilizing various graph structures.
- Abstractly developed the framework to be applicable to other downstream predictive tasks (e.g. mortality prediction).
- Contributed to open-source project (HSPO ontology), published two research papers (first author) and filed a patent (primary inventor).

Machine - Deep Learning Engineer, Researcher Mar. 2019 – Sep. 2019
I-SENSE Group, ICCS, NTUA *Athens, Greece*
- Worked on an Eye-Tracking and Object-Detection system and implemented Deep Learning (DL) architectures for Gaze Localization.
- Developed process for Generative Adversarial Networks quality evaluation using pre-trained DL models and Random Forest.
- Performed data pre-processing and manipulation for the unification of image datasets related to driving conditions.

Data Scientist Mar. 2018 – Jul. 2018
Feel Therapeutics *Athens, Greece*
- Developed proprietary algorithms for signal processing of Heart Rate Variability (signal reconstruction and quality estimation).
- Created procedure for data retrieval from cloud storage space (AWS Athena).

Education

KU Leuven Sept. 2020 – Mar. 2025

Doctor of Philosophy - PhD, Computer Science *Leuven, Belgium*

- Research Areas: Natural Language Processing, Information Extraction, Deep Learning, Knowledge Graphs, Knowledge Discovery
- Advisor: Prof. Marie-Francine Moens

KU Leuven Sept. 2019 – Aug. 2020

Advanced MSc, Artificial Intelligence *Leuven, Belgium*

- Grade: 81.17%, Magna Cum Laude - Great Distinction
- Dissertation: "Automatic artifact removal of resting-state fMRI with Deep Neural Networks", Advisor: Prof. Sabine Van Huffel

National and Technical University of Athens Oct. 2012 – Oct. 2018

Integrated BSc & MSc, Electrical & Computer Engineering *Athens, Greece*

- Grade: 81.8%, Great Distinction
- Dissertation: "Deep Learning Techniques for Emotion Recognition through Facial Expressions", Advisor: Prof. Stafylopatis

Selected Publications and Patents

Christos Theodoropoulos, James Henderson, Andrei C. Coman, Marie-Francine Moens. **Reduction of Supervision for Biomedical Knowledge Discovery**. BMC Bioinformatics. 2025. (Journal)

Andrei C. Coman, **Christos Theodoropoulos**, James Henderson, Marie-Francine Moens. **Fast-and-Frugal Text-Graph Transformers are Effective Link Predictors**. In Proceedings of the 63rd Annual Meeting of the Association for Computational Linguistics. 2025. (ACL '25). (Findings)

Christos Theodoropoulos, James Henderson, Andrei C. Coman, Marie-Francine Moens. **Enhancing Biomedical Knowledge Discovery for Diseases: An Open-Source Framework Applied on Rett Syndrome and Alzheimer's Disease**. IEEE Access 12. 2024. 180652–180673. (Journal)

Christos Theodoropoulos, Natalia Mulligan, Thaddeus Stappenbeck, Joao H Bettencourt-Silva. **Representation Learning for Person or Entity-centric Knowledge Graphs: An Application in Healthcare.** In Proceedings of the 12th Knowledge Capture Conference. 2023. (K-CAP '23). Association for Computing Machinery. (oral presentation)

Christos Theodoropoulos, Natalia Mulligan, Joao H Bettencourt-Silva, Marco Luca Sbodio. **Learning relations in multi-relational graphs in graph neural networks**. U.S. Patent. 2023. (filed)

Christos Theodoropoulos, Marie-Francine Moens. **An Information Extraction Study: Take In Mind the Tokenization!** In Proceedings of the 13th Conference of the European Society for Fuzzy Logic and Technology (EUSFLAT). 2023. (oral presentation)

Christos Theodoropoulos, James Henderson, Andrei C. Coman, Marie-Francine Moens. **Imposing Relation Structure in Language-Model Embeddings Using Contrastive Learning.** In Proceedings of the 25th Conference on Computational Natural Language Learning. 2021. (oral presentation)

Christos Theodoropoulos, Christos Chatzichristos, and Sabine Van Huffel. **Automatic artifact removal of resting-state fMRI with Deep Neural Networks.** In Proceedings of the 29th European Signal Processing Conference (EUSIPCO). IEEE, 2021.

Honors and Awards

Scholarship for PhD studies, FWO fellowship, KU Leuven 2020-2024

Scholarship for MSc studies

Bodossaki Foundation and Eugenides Foundation *2019-2020*

Scholarship for BSc and MSc studies

Bakopouleio Foundation *2012-2017*

Technical, Soft Skills and Talks

Programming: Python (PyTorch, PyTorch-Geometric, Scikit-learn, Huggingface, Spacy, Numpy, ONNX, Streamlit, vLLM, llama-cpp, Unsloth, Pydantic AI, LangChain), Cypher (Neo4j), Matlab, C

Agile Development, Versioning, and Project Management: Git, DVC, Poetry, uv, Hydra, JIRA, Scrum

Cloud and DevOps: Azure, Docker, fastAPI

Conference/Other Talks: DTAI Seminar '24 - KU Leuven, MIE '24, Keynote talk on Knowledge Discovery - Idiap visit '24, EUSFLAT '23, Show & Tell - IBM Research '22, CoNLL '21, EUSIPCO '21

Job Shadowing: Data/AI Scientist Role in B12 Consulting '24, Business Day in Upstream '18, Business Day in Oracle '18

Languages: English (fluent), Greek (native), French (elementary)

Soft skills: Learnability, Communication, Collaboration, Critical Thinking, Problem-Solving, Time Management, Adaptability, Mentorship, Attention to Detail, Active listening, Self-motivation