Krzysztof Olejniczak

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Experience

AI Researcher May 2025 – Sep 2025

Catapult, London (United Kingdom)

- Sole engineer for end-to-end model development in an early-stage start-up, creating a personalized AI assistant understanding user's unique digital context, from emails to documents, to support day-to-day tasks and challenges.
- Designed, implemented, and evaluated retrieval-augmented generation (RAG) pipelines for private user data, covering techniques such as embedding-based retrieval, graph neural networks, and knowledge graphs.

Machine Learning Engineer, Video Recommendation Sep 2024 – May 2025

TikTok, London (United Kingdom)

- Developed large-scale recommendation models for short-video retrieval and ranking, specializing in modeling receiver dynamics, capturing how users select recipients when sharing videos and how recipients interact with shared content.
- Redesigned the architecture of the receiver prediction model, improving its AUC from **93%** to **96%**.
- Built models to predict receiver interactions (likes, re-shares etc.) and trained them on the newly created real user data. Integrating these predicted interactions into the core recommendation system drove a **+4.5%** increase in shared items per user and a **+1%** rise in direct messages sent per user, strongly improving share-related business metrics.

Internships

Machine Learning Scientist Intern Jun 2023 – Sep 2023

Expedia, London (United Kingdom)

- Researched model-agnostic feature attribution methods for evaluating global- and local-scope variable importance.
- Developed tools, later adopted by RL Scientists, to explain the behaviour of RL agents used for personalisation and recommendation tasks, enabling analysis of their decision-making process both during and after training.

Machine Learning Research Intern Jul 2022 – Sep 2022

Rossum, Prague (Czech Republic)

- Performed research in deep learning based state-of-the-art methods for "in-the-wild" Text Detection.
- Adapted the strategies of the most promising approaches to the domain of structured documents, and trained models implementing them on document datasets, to determine their suitability for Document OCR applications.

Education

University of Oxford Oct 2025 –

DPhil in Computer Science

- **Areas of focus:** Neural Theorem Proving, AI for Mathematics, Automated Reasoning, Neuro-symbolic AI

University of Oxford Oct 2020 – Jun 2024

Master's Degree in Mathematics and Computer Science

- **Master's Degree**: Distinction (**86%** average); Hoare Prize for best overall performance by a Math&CS student.
- **Master's Thesis**: Awarded **91%** score; Gibbs prize for the best thesis among Math&CS and Math&Phil candidates. Title: *"AnyCQ: Graph Neural Networks for Answering Conjunctive Queries over Incomplete Knowledge Graphs"*
- **Bachelor's Degree**: First Class (**82%** average); Departmental Prize for the best result among Math&CS students.

Publications

Flock: A KG Foundation Model via Learning on Random Walks *Submitted to ICLR'26*

Jinwoo Kim, Xingyue Huang, Krzysztof Olejniczak, Kyungbin Min, Michael Bronstein, Seunghoon Hong, İsmail Ceylan

AnyCQ: GNNs for Answering Complex Queries over Knowledge Graphs *Submitted to LoG'25*

Krzysztof Olejniczak, Xingyue Huang, Mikhail Galkin, İsmail İlkan Ceylan

Text Detection Forgot About Document OCR *In Proceedings of CVWW'23*

Krzysztof Olejniczak, Milan Šulc

Group Projects

Oxford AI Labs Researcher Dec 2023 – May 2024

Participated in a group project organised by Oxford AI Society, researching the potential of diffusion models to generate learning signal for unsupervised object detection and recognition, by incorporating layout guidance mechanisms.