

# Miklós Hamar

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## SUMMARY

AI R&D Engineer with expertise in Reinforcement Learning, Information Retrieval, and ML frameworks. Recently completed MSc in Artificial Intelligence with first-ever open-source reproduction of AlphaDev. Published researcher with proven track record of developing production-grade AI solutions and bridging theory-to-practice gaps in complex engineering environments.

## EDUCATION

<b>University of Amsterdam</b> <i>Master of Science in Artificial Intelligence</i>	Amsterdam, Netherlands Sep. 2023 – Jul. 2025
<ul style="list-style-type: none"><li>Thesis: <b>AlphaDev-Open</b> – First open-source, scalable reproduction of AlphaDev RL algorithm with parallel training pipelines</li><li>Coursework: Deep Learning, NLP, Computer Vision, Information Retrieval, Reinforcement Learning, Foundation Models</li><li>Research: Published in TMLR 2024 (explainable AI), paper under review at SIGIR 2025 (synthetic data generation)</li></ul>	
<b>University of Warwick</b> <i>Bachelor of Science in Computer Science</i>	Coventry, United Kingdom Sep. 2019 – Jul. 2022
<ul style="list-style-type: none"><li>Focus: Data Science, Artificial Intelligence, Computational Chemistry</li><li>Foundation in algorithms, formal languages, logic verification, and compiler design</li></ul>	

## EXPERIENCE

<b>Full-Stack Software Developer Intern</b> <i>ASML</i>	Aug. 2024 – Present Veldhoven, Netherlands
<ul style="list-style-type: none"><li>Developed enterprise-scale workflow management application replacing legacy Excel-based processes for outsourcing team</li><li>Built end-to-end solution using Mendix platform and Azure cloud, handling front-end, back-end, and database design</li><li>Application serves 200+ employees daily with proven efficiency improvements and enhanced data integrity</li><li>Acted as primary technical liaison with stakeholders, translating requirements into actionable features with clear timelines</li></ul>	
<b>Consultant Software Developer</b> <i>Sigma Technologies / Flex Ltd</i>	Aug. 2022 – Sep. 2023 Budapest, Hungary
<ul style="list-style-type: none"><li>Led architecture and implementation of customized testing frameworks using Python and embedded C++</li><li>Developed automation solutions with high autonomy, streamlining processes across multiple engineering teams</li><li>Delivered end-to-end project ownership from requirements gathering to deployment and maintenance</li></ul>	

## KEY PROJECTS & PUBLICATIONS

<b>AlphaDev-Open: Open-Source RL Reproduction</b>   <i>Python, JAX, Reinforcement Learning</i>	2024 – 2025
<ul style="list-style-type: none"><li>First open-source implementation of AlphaDev method with scalable, parallelizable training pipeline</li><li>Re-implemented Asynchronous Policy-Value Monte-Carlo Tree Search (APV-MCTS) algorithm from scratch</li><li>Achieved comparable parallelism levels to original DeepMind paper through efficient Python implementation</li></ul>	
<b>Explainable AI for Temporal Graphs</b>   <i>PyTorch, Graph Neural Networks</i>	2024
<ul style="list-style-type: none"><li>Published in TMLR 2024 Reproducibility track: reproduced and extended Explorer-Navigator framework</li><li>Enhanced AI model transparency for safety-critical applications through improved explainability methods</li></ul>	
<b>Synthetic Data Generation for Information Retrieval</b>   <i>LLMs, Information Retrieval</i>	2024
<ul style="list-style-type: none"><li>Extended LLM-based synthetic query generation pipeline, paper under review at SIGIR 2025</li><li>Achieved improved training data efficiency without human-annotated relevance judgments</li></ul>	
<b>AI-Assisted CV Scoring System</b>   <i>RAG, LLMs, Information Retrieval</i>	2025
<ul style="list-style-type: none"><li>Developing orchestrated system of retrieval and language models for automated candidate matching</li><li>Implementing efficient document processing pipeline for large-scale CV databases</li></ul>	

## TECHNICAL SKILLS

**AI/ML Frameworks:** PyTorch, TensorFlow, JAX, scikit-learn, DSPy, Hugging Face Transformers  
**Programming Languages:** Python, C++, SQL, JavaScript, MATLAB  
**Specializations:** Reinforcement Learning, Information Retrieval, Deep Learning, NLP, Computer Vision  
**Tools & Platforms:** Git, Docker, Azure Cloud, Mendix, Linux, Jupyter, MLflow  
**Research Skills:** Academic writing, reproducible research, statistical analysis, experimental design