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

University of Amsterdam   Amsterdam, Netherlands
Master of Science in Artificial Intelligence   *Sep. 2023 – Jul. 2025*
- Thesis: **AlphaDev-Open** – First open-source, scalable reproduction of AlphaDev RL algorithm with parallel training pipelines
- Coursework: Deep Learning, NLP, Computer Vision, Information Retrieval, Reinforcement Learning, Foundation Models
- Research: Published in TMLR 2024 (explainable AI), paper under review at SIGIR 2025 (synthetic data generation)

University of Warwick   Coventry, United Kingdom
Bachelor of Science in Computer Science   *Sep. 2019 – Jul. 2022*
- Focus: Data Science, Artificial Intelligence, Computational Chemistry
- Foundation in algorithms, formal languages, logic verification, and compiler design

EXPERIENCE

Full-Stack Software Developer Intern   Aug. 2024 – Present
ASML   *Veldhoven, Netherlands*
- Developed enterprise-scale workflow management application replacing legacy Excel-based processes for outsourcing team
- Built end-to-end solution using Mendix platform and Azure cloud, handling front-end, back-end, and database design
- Application serves 200+ employees daily with proven efficiency improvements and enhanced data integrity
- Acted as primary technical liaison with stakeholders, translating requirements into actionable features with clear timelines

Consultant Software Developer   Aug. 2022 – Sep. 2023
Sigma Technologies / Flex Ltd   *Budapest, Hungary*
- Led architecture and implementation of customized testing frameworks using Python and embedded C++
- Developed automation solutions with high autonomy, streamlining processes across multiple engineering teams
- Delivered end-to-end project ownership from requirements gathering to deployment and maintenance

KEY PROJECTS & PUBLICATIONS

AlphaDev-Open: Open-Source RL Reproduction | *Python, JAX, Reinforcement Learning*   2024 – 2025
- First open-source implementation of AlphaDev method with scalable, parallelizable training pipeline
- Re-implemented Asynchronous Policy-Value Monte-Carlo Tree Search (APV-MCTS) algorithm from scratch
- Achieved comparable parallelism levels to original DeepMind paper through efficient Python implementation

Explainable AI for Temporal Graphs | *PyTorch, Graph Neural Networks*   2024
- Published in TMLR 2024 Reproducibility track: reproduced and extended Explorer-Navigator framework
- Enhanced AI model transparency for safety-critical applications through improved explainability methods

Synthetic Data Generation for Information Retrieval | *LLMs, Information Retrieval*   2024
- Extended LLM-based synthetic query generation pipeline, paper under review at SIGIR 2025
- Achieved improved training data efficiency without human-annotated relevance judgments

AI-Assisted CV Scoring System | *RAG, LLMs, Information Retrieval*   2025
- Developing orchestrated system of retrieval and language models for automated candidate matching
- Implementing efficient document processing pipeline for large-scale CV databases

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