

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

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| University of Amsterdam | Amsterdam, Netherlands |
| <i>Master of Science in Artificial Intelligence</i> GPA: 7.75 | Sep. 2023 – Jul. 2025 |
| <ul style="list-style-type: none">Thesis: AlphaDev-Open – First open-source reproduction of a breakthrough model by Google-DeepMindCoursework: GenAI pipelines, Semantic Retrieval, Synthetic Data Generation, Computer Vision for Medicine, Parameter-Efficient Fine-TuningResearch: Published in TMLR 2024 (explainable AI), paper under review at SIGIR 2025 (synthetic data generation) | |
| University of Warwick | Coventry, United Kingdom |
| <i>Bachelor of Science in Computer Science</i> GPA: 6.7 | Sep. 2019 – Jul. 2022 |
| <ul style="list-style-type: none">Focus: Theoretical foundations, computational logic, discrete mathematics, machine learningPractical experience with both embedded and high-level software design. Expertise with both functional and object-oriented languages. | |

EXPERIENCE

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| Full-Stack Software Developer Intern | Aug. 2024 – Present |
| <i>ASML</i> | Veldhoven, Netherlands |
| <ul style="list-style-type: none">Develop a comprehensive platform to formalize and automate the day-to-day activities of the procurement team within the company.Built end-to-end solution using Mendix platform and Azure cloud, handling front-end, back-end, database design and deploymentApplication serves 200+ employees daily with proven efficiency improvements and enhanced data integrityActed as primary technical liaison with stakeholders, translating requirements into actionable features with clear timelines | |
| Consultant Software Developer | Aug. 2022 – Sep. 2023 |
| <i>Sigma Technologies / Flex Ltd</i> | Budapest, Hungary |
| <ul style="list-style-type: none">Led architecture and implementation of customized testing frameworks using Python and embedded C++Developed automation solutions with high autonomy, streamlining processes across multiple engineering teamsDelivered end-to-end project ownership from requirements gathering to deployment and maintenance | |

KEY PROJECTS & PUBLICATIONS

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| AlphaDev-Open: Open-Source RL Reproduction <i>Python, JAX, Reinforcement Learning</i> | 2024 – 2025 |
| <ul style="list-style-type: none">First open-source implementation of AlphaDev method with scalable, parallelizable training pipelineRe-implemented Asynchronous Policy-Value Monte-Carlo Tree Search (APV-MCTS) algorithm from scratchAchieved comparable parallelism levels to original DeepMind paper through efficient Python implementation | |
| Explainable AI for Temporal Graphs <i>PyTorch, Graph Neural Networks</i> | 2024 |
| <ul style="list-style-type: none">Published in TMLR 2024 Reproducibility track: reproduced and extended Explorer-Navigator frameworkEnhanced AI model transparency for safety-critical applications through improved explainability methods | |
| Synthetic Data Generation for Information Retrieval <i>LLMs, Information Retrieval</i> | 2024 |
| <ul style="list-style-type: none">Extended LLM-based synthetic query generation pipeline, paper under review at SIGIR 2025Achieved improved training data efficiency without human-annotated relevance judgments | |
| AI-Assisted CV Scoring System <i>RAG, LLMs, Information Retrieval</i> | 2025 |
| <ul style="list-style-type: none">Developing orchestrated system of retrieval and language models for automated candidate matchingImplementing 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/C++, SQL, JavaScript, Haskell
Specializations: Reinforcement Learning, Information Retrieval, Deep Learning, NLP, Computer Vision, Neuro-symbolic AI, Academic Research
Tools & Platforms: Git, Docker, Azure Cloud, Mendix, Linux, Jupyter, Kubernetes