

Jan Jelínek

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SUMMARY

Master's student in Artificial Intelligence with a strong background in Applied Mathematics and deep learning research. Experienced in developing computer vision models for agricultural robotics and implementing model validation tests in professional banking environments. Skilled in Python and Java with a focus on creating interpretable AI solutions for real-world problems.

EXPERIENCE

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| Biomimicry Research Group – Inholland | Alkmaar, NL |
| <i>Artificial Intelligence Intern Researcher</i> | Feb 2025 – June 2025 |
| <ul style="list-style-type: none">Developed a Deep Learning model to detect pests and predators at various life stages (larvae, adults) to facilitate pesticide-free farming.Conducted experiments to collect data which was then integrated into the model. | |
| Inholland University of Applied Sciences | Amsterdam, NL |
| <i>Coach – Minor Understanding AI</i> | Jan 2024 – Aug 2025 |
| <ul style="list-style-type: none">Served as a teacher's assistant and coach, guiding students through foundational AI concepts and practical implementations. | |
| Nationale-Nederlanden | Den Haag, NL |
| <i>Model Validation Intern</i> | Sept 2023 – Jan 2024 |
| <ul style="list-style-type: none">Implemented A-IRB validation tests using Python, specifically focusing on Probability of Default (PD) metrics. | |

PROJECTS

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| Reproducing Generative Recommendation with Semantic IDs | June 2026 |
| <i>University of Amsterdam</i> | |
| <ul style="list-style-type: none">Implemented and extended a generative recommender framework leveraging semantic IDs to improve recommendation accuracy. | |
| Solving the Laplace Equations using residual PINNs | Apr 2026 – May 2026 |
| <i>University of Amsterdam</i> | |
| <ul style="list-style-type: none">Investigated harmonic decomposition combined with a residual PINN network to solve the Laplace Equation | |
| Mechanistic Interpretability Reproducibility & Extension | Jan 2026 – February 2026 |
| <i>University of Amsterdam</i> | |
| <ul style="list-style-type: none">Evaluated the generalization of weight-based mechanistic interpretability from grayscale digits to more complex RGB datasets (CIFAR-10/100, Tiny ImageNet).Investigated the impact of Gaussian noise regularization on eigenvalue spectra, identifying emergent edge detector structures in high-dimensional features. | |
| Fungus Disease Detection Algorithm | Feb 2024 – June 2024 |
| <i>Lectoraat Robotica Hogeschool Inholland</i> | |
| <ul style="list-style-type: none">Designed and implemented a deep learning algorithm focused on the early detection of fungal diseases in plants to optimize agricultural yield. | |
| Anomaly Detection System | Nov 2022 – Jan 2023 |
| <i>Debiteuren 365</i> | |
| <ul style="list-style-type: none">Developed a system to identify irregular patterns and anomalies within financial datasets. | |

EDUCATION

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| University of Amsterdam | Amsterdam, NL |
| <i>MSc Artificial Intelligence</i> | Sept 2025 – July 2027 (Expected) |
| Inholland University of Applied Sciences | Amsterdam, NL |
| <i>BSc Applied Mathematics (incl. Minor in Deep Learning)</i> | Sept 2021 – June 2025 |

SKILLS

- Programming:** Python, Java, MySQL, NoSQL
- Machine Learning & AI:** Deep Learning, NLP, Computer Vision, Statistics, Calculus, GIS
- Languages:** Czech (Native), English (Fluent), Slovak (Professional Fluency), German (B1), Dutch (Conversational)