Andrei Ilinescu

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Experience

AI Engineer Intern Oct 2025 – Present
Strala AI *San Francisco, CA*
- Reduced AI Agent debugging time by implementing automated multi-agent test pipelines that accelerated issue detection.
- Lowered multi-lingual Vocal AI Agent error rate by 15% through prompt and tool performance tuning.

Software Engineer Intern Jul 2025 – Oct 2025
Amazon *Madrid, Spain*
- Automated on-call ticket handling by integrating an MCP server and AI Agent with AWS EventBridge, SQS, and Lambda for fully event-driven incident workflows.
- Reduced 30h/month of manual workload by provisioning triage and resolution pipelines via AWS CDK and CloudFormation, instrumented with CloudWatch monitoring.

Software Engineer Intern Apr 2025 – Jul 2025
HelinData *Rotterdam, Netherlands*
- Reduced site onboarding time by 11 hours per site by developing a no-code Energy Management Configurator using React, TypeScript, and DGM.js with an infinite-canvas interface.
- Increased deployment reliability by automating PLC code generation and validation through a Python & FastAPI backend, minimizing workflow errors and manual intervention.

Research and Development Engineer Intern Oct 2023 – Jul 2025
Ampelmann Operations *Delft, The Netherlands*
- Saved analysts 20 hours per month by designing a UDP logging system with parallel and asynchronous processing.
- Improved operator efficiency by developing HMI software for PLC control, enhancing real-time system monitoring.
- Accelerated diagnostics and data visualization by building simulation and plotting tools that streamlined analysis workflows.

Education

Politecnico di Milano Milan, Italy
Minor in Applied Mathematics *Sep 2025 – Feb 2026*
- Graduate-level coursework: Stochastic Differential Equations, Stochastic Dynamical Models, Game Theory, Quantum Physics, Advanced Neural Networks and Deep Learning.

Delft University of Technology Delft, Netherlands
B.Sc. in Computer Science and Engineering *Sep 2023 – Present*
- Relevant Coursework: Algorithm Design, Machine Learning, Data Mining, Comp. Intelligence, Computer Graphics
- Lead Organizer, IBM Quantum Qiskit Fallfest 2025.

Research Experience

Honours Researcher - Quantum Data Management Jul 2024 – Present
InfiniData Lab, TU Delft *Delft, The Netherlands*
- Increased quantum simulation speed by 50% and reduced memory usage by building a high-performance circuit simulator optimized for sparse, high-qubit workloads.
- Advanced simulator optimization research by generating the largest corpus of quantum circuits to date with an adaptive probabilistic pipeline, extracting features, and benchmarking performance across simulators.

Projects

Fine-Tuning LLaVA-7B for Disaster Damage Assessment | *Vision-Language Models, LoRA/PEFT, PyTorch*
- Fine-tuned LLaVA-7B with LoRA on the xBD satellite dataset for post-disaster damage classification and visual question answering, improving natural-language query accuracy (e.g., "How many buildings are destroyed?") through optimized prompts and training pipelines.

MNIST Classifier | *C++, OpenMP*
- Implemented a neural network from scratch to classify digits, optimizing matrix operations and activations.

Splitty | *Spring, JavaFX, Websockets*
- Led a 5-student team to design and develop a real-time expense management app, enabling instant updates via REST and WebSockets.

Awards & Certifications

1st Place – AcadNet Applied Informatics Olympiad, National and International Phase (2023)
Silver Medal ITACPC (2025)
Top 10 – Romanian National Olympiad in Informatics (2016-2020)
2nd Place – Harman Hackathon (2021)
Special Prize – Hermes Hackathon (2021)
CCNA (Cisco), MongoDB Performance & Cluster Administration, Google Digital Marketing

Technical Skills

Programming & Development: C++, Python, Java, JavaScript, React, Scala, Bash, Typescript
Cloud Computing: AWS (Lambda, EventBridge, SQS, CloudWatch, CloudFormation, CDK), Docker, CI/CD, Infrastructure as Code
High-Performance Computing: Multithreading, Parallel Computing, Memory Optimization
Data Science & Big Data: NumPy, Pandas, Spark, Flink, MongoDB, Postgres, SQLite, SQL, Pytorch
Software Engineering: Agile, Design Patterns, JUnit, Mockito, CI/CD, Mutation Testing
Networking & Systems: TCP/UDP, CCNA Certified, Linux, System Profiling
Quantum Computing: Qiskit, Tensor Networks, Quantum Simulation, Information Theory