Michał Andrzej Sitarz

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Education

KTH Royal Institute of Technology, *MSc Machine Learning*, Sweden — Aug 2023 - Jan 2026

Relevant Modules: Machine Learning, Deep Learning, Computer Vision, Robotics, Graphics

University of Surrey, *BSc (Hons) Computer Science*, UK — Aug 2019 - Jun 2023

Relevant Modules: Deep Learning, Artificial Intelligence, Software Engineering, NLP

Experience

National Institute of Informatics, *Research Internship*, Japan — Aug 2025 - Jan 2026

- Analyzed reflectance behavior of synthetic materials using BRDF parameters and Video Motion Magnification techniques, producing promising results that will inform future lab research.
- Developed Python implementations of signal processing algorithms, including Riesz Transform for motion/reflectance decomposition.

Ericsson Research, *MSc Thesis Project*, Sweden — Jan 2025 - Jul 2025

- Applied adaptive RL with quantization to network-aware robot control, demonstrating improved model efficiency and policy interpretability on proprietary datasets.
- Extended the base algorithm with stability improvements and real-world control constraint alignment.
- Built end-to-end training and evaluation pipelines for network-constrained environments

KTH Royal Institute of Technology, *Teaching Assistant in Visualization*, Sweden — Aug 2024 - Nov 2024

- Graded coursework and led support sessions, guiding students through core visualization concepts.

University of Surrey (CVSSP Lab), *Summer Research Internship*, UK — Jul 2023 - Sep 2023

- Built a Gazebo simulation environment and a curriculum-based Reinforcement Learning pipeline using PyTorch.
- Trained a TurtleBot agent to autonomously score goals in simulation, supporting future deployment for RoboCup robotics competitions.

Hawk-Eye Innovations, *Machine Learning Engineer (Placement)***,** UK — Sep 2022 - Jun 2023

- Improved UX and functionality of an internal React-based annotation tool used for training models.
- Developed C++ applications for data collection, visualization, and preprocessing used by tennis operators.
- Optimized large-scale data processing pipelines, significantly reducing preparation time for tennis model training.
- Prototyped ML pipeline improvements during hackathons, including evaluating YOLO-based pose-estimation models in PyTorch to explore potential accuracy and latency gains.

Projects

Generative AI Reproductions: Reproduced and ablated flow-based models (Minibatch Optimal Transport), diffusion-based segmentation, and VAEs, gaining hands-on experience with modern generative AI — 2024

Autonomous Navigation: Implemented Hybrid A* path planning with PID control for virtual car navigation in Unity, handling dynamic obstacle avoidance — 2024

RoboKinesis (BSc Thesis): Developed a vision-based robotic control system combining OpenCV keypoint tracking with inverse kinematics for gesture-driven manipulation — 2023

Skin Cancer Classification: Experimented with CNN architectures (ResNet, EfficientNet, etc.) on the HAM10000 dataset, exploring data augmentation and transfer learning techniques — 2023

Genetically Modified Wolf Optimization for Deep Neural Nets: Developed a novel optimization approach combining genetic algorithms and SGD; documented methodology in a technical paper (publication) — 2023

Skills

Programming Languages: Python, C++, Java, React
ML/AI Frameworks: PyTorch, OpenCV, NumPy, CUDA
Tools & Infrastructure: Git, Docker, Linux, Bash, TorchServe, SQL
3D/Simulation: ROS, Gazebo, Blender, Unreal Engine 5, Unity
Languages: Polish (Native), English (C2), Croatian (C2)