Teodor Ilie

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Experience

Designer Level II - Autonomy Team
Oct 2026 – Present

MacLean Engineering — Barrie, ON, Canada

- Developing autonomous robotics systems for mobile mining applications

Graduate Research Engineer
Sep 2024 – Sep 2026

Queen's University - Ingenuity Labs — Kingston, ON, Canada

- Developed Deep Reinforcement Learning (DRL) controllers for autonomous vehicle drift, enabling safe recovery in loss-of-traction scenarios
- Built custom Gym simulation with PAC2002 tire model and Frenet-frame rewards, enabling parallelized DRL training with CUDA and W&B tracking
- Deployed trained policies on a physical 1/10-scale vehicle and evaluated sim-to-real transfer performance.

F1TENTH Autonomous Racing Team Lead
Jul 2025 – Sep 2026

Queen's University - Ingenuity Labs — Kingston, ON, Canada

- Founded Ingenuity Labs Racing, Queen's first grad-level design team, competing at international robotics competitions like ICRA 2026
- Recruited and led 10+ PhDs, post-docs, and MSc researchers, with IEEE faculty advisors, in developing and testing racing algorithms
- Architected full autonomous racing stack in ROS2: LiDAR-based SLAM, path planning, and real-time control, achieving superhuman lap times

Full-Stack Software Developer
Sep 2022 – Sep 2026

BMO Financial Group — Toronto, ON, Canada

- Developed and maintained a full-stack internal equity trading platform ("SKOPE") in an Agile team using Spring Boot REST APIs and an Angular Material frontend, supporting systems with over $2T in monthly transaction volume.
- Automated CI/CD pipelines with Azure DevOps and TDD-based testing, reducing unit test runtime by 50% and improving deployment reliability
- Built and presented an AI-based cash flow forecasting prototype to senior executives using ARIMA, AWS, and Jupyter notebooks

Education

Master of Computer Science — AI Specialization
Sep 2024 – Sep 2026

Queen's University — Kingston, ON, Canada

- GPA: 4.3/4.3 — Relevant coursework: Reinforcement Learning (A+), Cybersecurity (A+), Computational Biology (A+)
- Awarded three of the university's most competitive graduate scholarships: Vector Institute, NSERC CGS, and OGS

Projects

Active SLAM with Deep Reinforcement Learning
Jan 2025 – Apr 2025

Reinforcement Learning, Computer Vision, Deep Learning

- Built a DRL Active SLAM system for autonomous navigation using ROS2, Gazebo, SLAM Toolbox, and PIC4RL on a Clearpath Jackal robot
- Designed a novel reward function with log-scaling, improving DRL training speed by 50%, and enabling mapping variable-sized environments
- Implemented and benchmarked state-of-the-art RL algorithms (PPO, SAC), achieving faster convergence and superior exploration with SAC

Personal Portfolio Website – #1 Google Result for My Name
Sep 2023 – Present

Astro, TypeScript, CSS, Cloudflare Pages

- Designed and built Astro portfolio website ranking #1 on Google for "Teo Ilie" via SEO and structured data, increasing recruiter outreach by 40%
- Achieved 100 desktop Lighthouse scores with build-time AVIF/WebP images and lazy-loaded media, deployed via Cloudflare Pages CI/CD

Skills

Programming	Python | Java | C++ | HTML | CSS | JavaScript | SQL | Bash | VBA | Prolog
Technologies	ROS2 | Gazebo | Docker | OpenCV | PyTorch | SB3 | Gymnasium | Git | Spring | Angular | Jira | Azure DevOps | AWS
Interests	Violin | Guitar | Visual art | Photography | Kickboxing | LEGO Technic Engineering
Languages	English | French | Spanish | Romanian

Awards

Vector Scholarship for AI Research, Vector Institute — 2024 – 2025

NSERC Canada Graduate Scholarship, Queen's University, NSERC — 2024 – 2025

BMO Student of the Term Award, BMO Financial Group — Aug 2020

NSERC Undergraduate Student Research Award, Queen's University, NSERC — Jul 2020