

Teodor Ilie

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Experience

Graduate Research Engineer 🏆

September 2024 — Present

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 🏆

July 2025 — Present

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

September 2022 — Present

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

Business Analyst

May 2021 — August 2021

BMO FINANCIAL GROUP

Toronto, ON, Canada

- Designed an automated reporting tool using Microsoft Power BI and Power Automate that eliminated 70% of manual reporting

Education

Master of Computer Science — AI Specialization

September 2024 — Present

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 🏆

January 2025 — April 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 🏆

September 2023 — Present

ANGULAR, TYPESCRIPT, HTML, SCSS

- Designed and built Angular portfolio website ranking #1 on Google for "Teo Ilie" through SEO optimization, increasing recruiter outreach by 40%
- Achieved 98% Google Lighthouse performance score through media compression, dynamic image sizing, pre-loading, and CDN caching

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

August 2020

NSERC Undergraduate Student Research Award, Queen's University, NSERC

July 2020