

Teodor Ilie

CURRICULUM VITAE

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Education

Queen's University

MASTER OF SCIENCE, COMPUTER SCIENCE

September 2024 - Present

Kingston, ON, Canada

- Researched autonomous vehicles, robotics, ML, control systems, and Unmanned Ground Vehicles under the supervision of Dr. Sidney Givigi
- Funded by both NSERC CGS and Vector Institute scholarships

Queen's University

BACHELORS OF COMPUTING (HONOURS) IN COMPUTER SCIENCE

September 2018 - August 2022

Kingston, ON, Canada

- GPA: 4.0/4.3, Dean's Honour List every academic year
- Relevant coursework: Data Analytics (A+), Artificial Intelligence (A), Data Structures (A+), Algorithms (A+), Software Architecture (A+), Logic (A+), Discrete Math (A+), Linear Algebra (A+), Calculus (A+), Statistics (A+), Introduction to Computer Science (A+), Advanced Spanish (A)

Skills

Programming Python | Java | C++ | HTML | SQL | PHP | JavaScript | VBA | Prolog

Technologies Git | Spring | Angular | Jira | Confluence | MS Power BI/Power Automate | MS Office | Final Cut Pro | Adobe Photoshop

Interests Violin | Guitar | Visual art | Photography | Muay Thai | Jiu Jitsu | Boxing | Choir | LEGO Technic Engineering

Languages English | French | Spanish | Romanian

Publications

- [1] A. Coulter*, T. Ilie*, R. Tibando*, and C. Muise, "Theory alignment via a classical encoding of regular bisimulation," ICAPS: Workshop on Knowledge Engineering for Planning and Scheduling (KEPS), (*equal contribution), 2022, Accessed: Dec. 05, 2023. [Online]. https://icaps22.icaps-conference.org/workshops/KEPS/KEPS-22_paper_7781.pdf
Citations: 3 🔗
- [2] A. Coulter*, T. Ilie*, R. Tibando*, and C. Muise, "Planning Tech for Planning Pedagogy," ICAPS: Workshop on Knowledge Engineering for Planning and Scheduling (KEPS), (*equal contribution), 2022, Accessed: Dec. 05, 2023. [Online]. Available: https://icaps22.icaps-conference.org/demos/ICAPS_2022_paper_376.pdf
Demo 🔗

Work Experience

BMO Financial Group

FULL-STACK SOFTWARE DEVELOPER

September 2022 - Present

Toronto, ON, Canada

- Developed an internal safekeeping app "SKOPE" using RESTful Spring APIs in the Back-End, and Angular Front-End, in an Agile team
- Leveraged JUnit unit testing, Git, TDD, automated Postman testing, and Maven API deployments, to deliver high-quality software
- Performed advanced analysis and design tasks to optimize codebase, reducing unit test size by 50%
- Presented innovative AI cash flow forecasting solution to senior executives, using an ARIMA model, AWS, and Jupyter notebooks

BMO Financial Group

BUSINESS ANALYST

May 2021 - August 2021

Toronto, ON, Canada

- Spearheaded the design of an automated reporting tool using Microsoft Power BI and Power Automate that improved efficiency by 1000%
- Networked online with leading teams across the bank, including the Technology Research & Innovation Team, to deliver the best product
- Conducted knowledge sharing workshops with my team and management to allow my tool to be used bank-wide after my term

BMO Financial Group

BUSINESS ANALYST

May 2020 - August 2020

Toronto, ON, Canada

- Coordinated month-end systems monitoring bridges by connecting bank-wide teams; reported hourly health checks to Senior executives
- Led weekly change meetings, connecting Product and Business teams across the business, using ServiceNow, JIRA, and Microsoft Teams
- Increased daily reporting efficiency by 200% for my team through automation, using Excel and Microsoft Virtual Basics coding

Awards

Vector Scholarship for AI Research

VECTOR INSTITUTE

- \$17,500 merit-based scholarship to support exceptional students in AI-related master's programs

2024-2025

Kingston, ON, Canada

NSERC Canada Graduate Scholarship

QUEEN'S UNIVERSITY, NSERC

- \$17,500 scholarship to support high-calibre students with a high standard of achievement in undergraduate and early graduate studies

2024-2025

Kingston, ON, Canada

Dean's Honour List

QUEEN'S UNIVERSITY

- Awarded every year of my Bachelor's for a GPA greater than 3.5/4.3

2018 - 2022

Kingston, ON, Canada

BMO Student of the Term Award

BMO FINANCIAL GROUP

- Awarded for one of top 3 nominees out of 240 interns, awarded by the Campus Recruitment Team for strongest contributions to the bank

August 2020

Toronto, ON, Canada

NSERC Undergraduate Student Research Award

QUEEN'S UNIVERSITY, NSERC

- Awarded \$6,000 grant for excellence in undergraduate studies and research aptitude

July 2020

Kingston, ON, Canada

Principal's Scholarship

QUEEN'S UNIVERSITY

- Awarded \$7,000 scholarship on the basis of academic excellence, to students who are in the top 5% of the competitive admission average

September 2018

Kingston, ON, Canada

Dr. T.M. Porter Scholarship for Mathematics

UNIVERSITY OF TORONTO SCHOOLS

- Awarded for excellence in undergraduate studies and research aptitude

July 2015

Toronto, ON, Canada

Canadian Computing Contest 1st Place Regional Winner

UNIVERSITY OF WATERLOO

- Awarded for a perfect score on this computer science competition

February 2014

Waterloo, ON, Canada

DECA Hospitality and Tourism Section Regional Qualifier

DECA

- Qualified for the national competition
- Developed communication skills and the ability to deliver compelling speeches

February 2014

Toronto, ON, Canada

Projects

Active SLAM with Deep Reinforcement Learning 🔗

January 2025 - April 2025

REINFORCEMENT LEARNING, COMPUTER VISION, DEEP LEARNING

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

Demo 🔗

Neural Network Digit Classification 🔗

January 2021 - April 2021

PYTHON, NEURAL NETWORKS

- Designed and implemented a Neural Network model in Python to correctly classify handwritten digits, using the MNIST dataset
- Gained an in-depth understanding of Neural Networks by programming the linear perceptrons and connections from scratch
- Experimented with loss functions, hidden layers, and activation functions, to achieve peak accuracy performance of 97% on the test dataset

Presidential Speech Efficacy Prediction 🔗

September 2020 - December 2020

MACHINE LEARNING MODELS (SVM, NEURAL NETWORK, RANDOM FOREST, KNN, BAYESIAN), EXCEL, KNIME

- Applied Data Analytics concepts like clustering and prediction to predict the efficacy of presidential candidate speeches with 94.6% accuracy
- Performed clustering using PCA, DBSCAN, and k-means, and visualized data in Excel; investigated accuracy using Bayesian, k-Nearest Neighbour, Neural Networks, Random Forests, and Support Vector Machines models in Jupyter Notebook and KNIME
- Determined key targets for writing compelling speeches, such as top 10 words, and investigated the role of deception in winning debates

Tetris Game 🔗

January 2015 - May 2015

JAVA, ABSTRACT WINDOW TOOLKIT API, OBJECT-ORIENTED PROGRAMMING

- Developed an interactive Tetris game, using object-oriented programming in Java, double-buffering, and the Java AWT API to render the GUI

Volunteer Experience

Bit-by-bit Computer Science Camp Volunteer

WESTERN UNIVERSITY

- Taught programming through LEGO Mindstorms to children, from beginner to advanced sections

2014

London, ON, Canada

ProVita Orphanage Volunteer

PROVITA

- Helped build new houses to expand accommodation
- Organized music workshops and sports activities for the children
- Acted and translated subtitles for promotional videos

2019 - Present

Valea Plopului, Romania