Theodore Pinkerton

career@tedpinkerton.ca | tedpinkerton.ca | github.com/RunnersNum40 | linkedin.com/in/ted-pinkerton

Education

University of Toronto, BASc in Engineering Science (Machine Intelligence and Robotics) Sept 2020 – Apr 2025

- **Coursework:** Data Structures & Algorithms, Distributed Systems, Operating Systems, Embedded Systems, Probability & Statistics, Linear Algebra & Optimization, Machine Learning & Artificial Intelligence, Robot Modelling & Control
- **Undergraduate Thesis:** Designed a reinforcement learning method using neural controlled differential equations for irregular, continuous-time, partially observable tasks and demonstrated improved performance over baseline models

Experience

Systems Administrator, Engineering Society – University of Toronto Apr 2024 – Apr 2025

- Maintained shared web and hardware infrastructure supporting 50+ teams and 1000+ users
- Administered Google Workspace and managed account access for student groups and teams
- Managed DNS, firewalling, and local network infrastructure

Software Engineer Co-op, BioConnect – Toronto, ON May 2023 – Aug 2024

- Maintained and developed a Vue 3 production UI used in safety-critical environments by first responders
- Migrated a large production web page from Vue 2 to Vue 3 and implemented end-to-end testing
- Independently designed and shipped a support and diagnostics page for 3,000+ IoT devices

Software Team Member, Robotics for Space Exploration – University of Toronto Sept 2024 – Apr 2025

- Built and tested rover software using ROS 1 with custom sensors and actuators over CAN bus
- Managed simulation and validation in Gazebo and RViz; wrote scenarios to regression-test behaviors

Mechanical Team Lead, Robotics for Space Exploration – University of Toronto Sept 2021 – Aug 2023

- Led and mentored 15+ engineering students to design the mechanical systems of a rover for Mars-like terrain
- Personally designed and manufactured a carbon fiber suspension system
- Collaborated with electrical, software, and science teams to create an integrated robotic system
- Helped the team regain competitive status post-pandemic by leading successful submissions to international rover challenges

Projects

Home Server

- Operate a two-node Proxmox cluster hosting containerized services
- Run an OPNSense firewall/router with WireGuard VPN to a VPS
- Serve internal services via Nginx reverse proxies; maintain storage services backed by a TrueNAS system

Lerax

- Built a fully JIT-compilable reinforcement learning library in Python on JAX, with modular environments, policies, and algorithms
- Automated CI/CD testing and packaging to PyPI for external users

Contributions and Engagement in Open Source Software

- Reported bugs, suggested direction, and contributed patches to tools I use
- Developed, packaged, and maintain Rust crates with outside users and contributors

Technical Skills

Programming Languages: Python, Rust, C, C++, Go, Haskell, JavaScript, TypeScript

Infrastructure / Platform: Linux, Docker, Proxmox, Nginx, WireGuard, OPNSense, pfSense, TrueNAS, Git, CI/CD, REST, Networking, Containerization & Virtualization

Robotics / ML: ROS 1 & 2, CAN Bus, I2C, Gazebo, RViz, JAX, PyTorch, Computer Vision, Embedded Systems, Control