

# Michael Hajostek

📞 (218) 289-4414

✉️ michael.hajostek@und.edu

🏠 Moorhead, MN 56560

🌐 Hajostek.com

🌐 LinkedIn.com/in/hajostek

🌐 Github.com/hockeymikey

## Education

**University of North Dakota - Grand Forks, ND**

Aug 2024 – Present

PhD in Computer Science

GPA: 4.0/4.0

Advisor: Dr. Tingjun Lei

- Research focus: autonomous systems, robotic simulation, reinforcement learning for control and robustness, multi-objective coverage planning, and adaptive path optimization.
- Selected coursework: Robotics Fundamentals, Introduction to Autonomous Systems, Reinforcement Learning, Machine Learning, Soft Computing & Computational Intelligence, Cyber-Physical Systems Security.

**Minnesota State University Moorhead - Moorhead, MN**

Aug 2015 – May 2019

B.S. Computer Science    B.S. Computer Information Technology

Minors: Computer Information Systems & Entrepreneurship

- Summa Cum Laude · Dean's List (8 semesters) · ACHA Academic All-American 2018–2019
- Presented senior capstone research on deep learning for short-term cryptocurrency prediction at MSUM's annual student academic conference.

## Research

**Autonomous Ice Resurfacing Agent**

PhD Dissertation Research

- Designing reinforcement learning agents for autonomous coverage of ice rink surfaces, addressing non-standard vehicle kinematics and constrained operating environments.
- Building high-fidelity simulation environments in **NVIDIA Isaac Sim** integrated with **Gymnasium**, enabling rapid policy iteration and sim-to-real transfer.
- Developing multi-objective planning and optimization methods for adaptive, informative coverage that balance surface quality, energy cost, and time constraints.
- Investigating RL-based control strategies for robustness under dynamic conditions (ice degradation, obstacle avoidance, sensor noise).

**Vegetation Classification via Convolutional Neural Network**

UND Summer REU, 2018

- Built a CNN using TensorFlow for image-based classification of surface vegetation during a summer REU at the University of North Dakota, preceding enrollment as a PhD student at UND.

## Industry Experience

**Tyrus Tech - Fargo, ND**

Feb 2024 – Present

Founder & Lead Software Engineer

- Founded a software consultancy; architecting distributed systems with microservice pipelines (Django, .NET, Angular) and containerized CI/CD infrastructure.

**Riviera Nexus - Fargo, ND**

Aug 2018 – Sept 2024

Senior Software Engineer

- Developed embedded software for the Ecolab CoreTemp medical fluid warmer used in hospital settings, including FDA-regulated testing and compliance documentation.
- Led full-stack web and mobile projects across diverse clients; served as technical lead for the **Cogi** platform and the **Arctic.gov** website launch.

**mPulse Mobile - Minneapolis, MN**

Jan 2022 – Nov 2022

Software Engineer

- Architected serverless AWS infrastructure (Lambda, Step Functions) for high-volume healthcare systems, designing event-driven pipelines with system observability.

## Technical Skills

- **Research & Robotics:** NVIDIA Isaac Sim, Gymnasium, TensorFlow, PyTorch, Python, C++, Matlab, Linux
- **Software Engineering:** Java, Django, React, Docker, AWS, Git, CI/CD, Traefik, Nginx, Prometheus, Grafana

## Leadership & Community

**Dragon Hockey - Moorhead, MN**

Oct 2022 – Present

President & Founder

- Founded a 501(c)(3) non-profit to support MSUM hockey; manage finances, fundraising, and coordination across university administration, league officials, and community stakeholders.

**MSUM Club Hockey – ACHA Division II - Moorhead, MN**

Apr 2018 – Present

Head Coach (Previously Founder/President)

- Built the program from scratch to 25+ members; lead all team operations including recruiting, scheduling, budgeting, and game-day strategy.