AUSM LAB York University · Lassonde School of Engineering

GRADUATE OPPORTUNITIES

Ph.D. and M.Sc. positions

Structured Spatial World Models

Toronto, Canada

Sensing · Autonomy

Drones, image–LiDAR fusion, tiny-object detection in orbit

3D World Models

LoD2 buildings, BIM digital twins, Gaussian splatting

Prediction · Action

Mapping agents, LLM and vision-language-action models

Start
Flexible (Fall, Winter or Summer terms)

Applications
Reviewed on a rolling basis

Email your **CV, transcripts and research statement** to **gsohn@yorku.ca**
Subject: **[Ph.D. or M.Sc.] Your Name**

ausmlab.com/join

GRADUATE OPPORTUNITIES

Ph.D. and M.Sc. positions

Applications reviewed on a rolling basis · Start: Flexible (Fall, Winter or Summer terms)

Join our work on structured spatial world models, where drones and robots sense the world, build accurate 3D models of it, and use those models to act.

ABOUT THE LAB

The AUSMLab at York University is always looking for talented and motivated researchers to join our team. Our research develops embodied spatial intelligence – AI systems that perceive, reason about, and act within physical space – with applications in smart construction, autonomous infrastructure monitoring, autonomous mapping and navigation, urban digital twins, and AI for Earth and space observation.

We are currently recruiting Ph.D. and M.Sc. students (and welcome inquiries from prospective postdoctoral fellows) supported by active research programs, including the NSERC Discovery Grant "Embodied Spatial Intelligence for Autonomous Infrastructure Monitoring" (2026-2031), the NSERC CREATE "Smart Mobility Advanced Research and Training (SMART)" program, and industry-partnered projects with organizations such as Teledyne Optech, Aethon Aerial Solutions, and the Ontario Ministry of Transportation.

RESEARCH FOCUS

- **Sensing · Autonomy**
  Drones, image–LiDAR fusion, tiny-object detection in orbit
- **3D World Models**
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- **Prediction · Action**
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RESEARCH AREAS

- Neural computer vision and robotic perception
- Autonomous mapping and navigation (SLAM, mobile mapping, UAVs)
- 3D urban modelling and digital twins of the built environment
- Vision-language models for infrastructure and railway monitoring
- AI for Earth and space observation, including Space Situational Awareness

WE OFFER

- Funding through NSERC Discovery, NSERC CREATE SMART and industry partners
- Industry internships and enhanced stipends through CREATE SMART
- A GPU computing cluster and real-world data from industry partners

WHO WE LOOK FOR

- A strong background in one or more of: computer vision, machine learning and deep learning, robotics, photogrammetry and remote sensing, or geomatics engineering.
- Solid programming skills (Python, PyTorch) and enthusiasm for working with real-world spatial data are important assets.

HOW TO APPLY

Email **Prof. Gunho Sohn, gsohn@yorku.ca** with:

- Your CV
- Transcripts
- A brief statement of research interests
- Representative publications or project work, if available

Subject line: **[Ph.D. or M.Sc.] Your Name**

ADMISSION & FUNDING

Graduate admission is through the Department of Earth and Space Science and Engineering (ESSE) at the Lassonde School of Engineering. Trainees may also be eligible for the MOVE-affiliated NSERC CREATE SMART training program, which offers enhanced stipends, industry internships, and exchange opportunities.