

# Kai Wang

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## SUMMARY

Detail-oriented and technically skilled professional transitioning from a surveyor to a GIS developer. Strong background in computer science, data analysis, and geospatial technologies. Currently expanding expertise in ArcGIS to enhance spatial data analysis and visualization capabilities. Committed to leveraging technical skills and problem-solving abilities to contribute to impactful projects.

**Technical Skills:** Python, SQL, VBA, AutoCAD, Gedo CE, Trimble S7/9, ArcGIS, R

## EDUCATION

**Nipissing University** | North Bay, ON  
*BS, Computer Science (GPA: 3.8/4.0)*

Graduated: June 2022

- Awards: CIBC Wood Gundy Award, J.W. Trusler Proficiency Awards, Carl Sanders Scholarship
- Member of the Nipissing Institutional Quality Assurance Protocol Review Committee for course quality review.

**University of Toronto** | Toronto, ON  
*BS, Cell and Molecular Biology*

Graduated: June 2017

## WORK EXPERIENCE

**Delta North Geomatics** | Toronto, ON  
*Surveyor*

Mar. 2023 – Aug.2023

- Conducted precise Light Rail Transit (LRT) alignment surveys and as-builts using Trimble total stations and GEDO CE
- Promoted from Surveyor Assistant to Junior Surveyor, and then to Surveyor within six months due to demonstrated proficiency.
- Developed automation tools for data comparison, analysis, and report generation using Python and VBA, significantly reducing task from hours to minutes.

**Ming Construction Ltd.** | Toronto, ON  
*Surveyor Assistant*

Sept. 2022 – Feb.2023

- Assisted in high-rise construction through detailed survey layout of schematics and as-builts.

**Nipissing University** | North Bay, ON  
*Research Assistant*

June 2019 - June 2022

- Developed and maintained experimental simulations and models for journal publication using relevant libraries and suites (OpenCV, Pandas) in python.
- Assisted the PhD and Professor with the proposal, documentation, specifications, analysis, development, and testing of multi-agent pathfinding and assignment optimization algorithms.
- Collaborated and coordinated with development teams of multiple universities to investigate and resolve setbacks in development and fulfil research requirements.

## **CAREER BREAK**

### **Travel and Cultural Exploration in Asia**

September 2023 – May 2024

- Traveled across multiple countries in Asia for personal and professional development.
- Engaged in self-directed learning through GIS and ArcGIS coursework.

## **PUBLICATION**

### **Multi-Agent Pathfinding and Optimization Research**

- Developed algorithms for multi-robot pathfinding and path allocation using spatial data and tracking extracted via OpenCV.
- Utilized Gaussian pathfinding and real-time task assignment to navigate robots through dynamic environments.

Behzad Akbari, Zikai Wang, Haibin Zhu, Lucas Wan, Ryan Adderson, Ya-Jun Pan: Role Engine Implementation for a Continuous and Collaborative Multirobot System. IEEE Trans. Syst. Man Cybern. Syst. 54(2): 866-877 (2024)