Michael Da

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Education

University of Waterloo Waterloo, ON

Bachelor of Environmental Studies in Geomatics, Minor in Computer Science

Experience

Technical Coordinator January 2025 – Present

University of Waterloo AWS Club *Waterloo, ON*

- Presented tutorials to **40+** students on the use of **AWS Lambda, S3, and Elastic Beanstalk**
- Hosted workshops on the introduction of **cloud computing and cybersecurity** by designing interactive demos, which enhanced student understanding of secure cloud practices
- Led tutorials on usage of **AI tools** for coding, data analysis and project work, which expanded members' technical skill sets

Technical Coordinator September 2024 – December 2024

University of Waterloo Geospatial Club *Waterloo, ON*

- Led a Geomatics outreach project by publishing educational infographic posts on remote sensing concepts and applications, reaching **100+** followers and generating **3,000+** impressions
- Demonstrated **Esri's** interactive **3D Mars map** to showcase planetary GIS capabilities and visualization tools
- Utilized **ArcGIS Online** to analyze transit networks across the **Greater Toronto Area** to provide potential improvements

Tutor July 2023 – June 2024

Upper Markham Learning Centre *Markham, ON*

- Created personalized lesson plans for **10+** students, increasing top 5 average to over **90%** within 3 months
- Taught 1-on-1 lessons on Calculus & Vectors, Advance Function, and elementary Singapore Math
- Provided ESL students in translation of their coursework into English, resulting successful transition out of the ESL program into regular classes

Projects

PlugNear | *Python, Next.js, Tailwind CSS, Mapbox GL, Docker*

- Developed a web application with **Next.js** and **Flask** for locating **EV charging stations**
- Built interactive maps with **Mapbox GL JS** to display charging stations
- Utilized coordinate-based data structures and spatial indexing to optimize location-based queries and improve application performance

Tree Canopy Detection from Drone Imagery | *QGIS, Python*

- Surveyed a park area by capturing high-resolution orthomosaic imagery using **DJI Mini 4 Pro drone**
- Applied the **VARI** (Visible Atmospherically Resistant Index) in **QGIS** for vegetation identification
- Analyzed Tree density by converting vegetation masks into tree canopy polygons
- Produced interactive **3D model** for clear visual interpretation

Map of Best Bike Trails in Markham | *ArcGIS Online, OpenstreetMap, AllTrails*

- Created thematic map by utilizing **ArcGIS Online** that highlights trail length, elevation, and difficulty
- Integrated data from **OpenStreetMap** for base map data, demonstrating proficiency in data acquisition
- Applied overlay key points of interest layer to accurately plot trail locations and associated amenities

Technical Skills

Languages: Python, R, SQL, JavaScript, HTML, CSS, Racket, R
GIS & Remote Sensing: ArcGIS Pro, ArcGIS Online, QGIS, Survey123, Mapbox, FME, DJI Fly, Dronelink, Luma
Tools: Git, Google Cloud Platform, OpenAI, Gemini, Supabase, firebae, AWS S3, Lambda, Elastic Beanstalk
DevOps: FME, AutoCAD, Adobe (Photoshop, Premiere Pro), Google Workspace, Figma, Tableau, Microsoft Office (Excel, Word, PowerPoint)