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**Manita Choudhary**

GIS Analyst



[manita-choudhary.github.io/](https://manita-choudhary.github.io/)



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**Status**: Canadian PR **Driving License**: Full G Class

Dear Selection Committee,

I am writing this application to express my interest and motivation to work as a **GIS ANALYST** with the **City of Brampton**. I want to utilize my knowledge of both the fields of **GIS** and **LiDAR**, and combine them with my expertise in programming to real-world scenarios. I am interested to work with creative, cooperative and successful GIS professionals in the **City of Brampton**.

I have completed my **Masters in GIS** in the Department of Geography of the **State University of New York at Buffalo** (UB). Apart from Bachelors and **Masters in Geography** with **Coastal Geomorphology** and **GIS** as my specialization, I have also attained a **Bachelor’s degree** in **Computer Applications**, which gave me a deep understanding of software and web programming. Recently, I acquired certification of **LEAN Six Sigma GREEN BELT**, which utilizes Lean methodology, Six Sigma Principles, **Project Management**, Change Management, and Strategic Thinking in various sectors.

I was a **LiDAR and Photogrammetry Analyst** in **Fugro Canada** where I was able to **lead** and **supervise** various **state government projects** to extract different assets using **LiDAR technology** and **Photogrammetry analysis**. I was also in charge of creating **training documents** and videos as part of **knowledge sharing**. I implemented **Lean principles** to report **daily production oversight** for all geospatial-related projects. I ensured the maintenance of optimal data quality by applying **QA/QC principles**.

For more than a year, I was a **Graduate Assistant** in the Geographic Information and Analysis Lab (GIAL), a multipurpose computing facility that supports the teaching and research needs of students and faculty in our department. I also have experience in **maintaining** the department **website** with Adobe Contribute and personal websites of professors with **Google sites** and **ArcGIS Hub**. I worked as a **Lecturer** in the summer for two years and as a **Teaching Assistant** for more than two years in my department. Recently I was an **Adjunct Instructor** in the **SUNY at Buffalo**, Department of Geography for a course focusing on **web-based GIS**. Most of the lectures I taught required me to design **GIS and Remote sensing** specific projects for the students, which were unique for each course.

I have extensively used **GIS** for most of my projects:

* Monitoring Spatio-Temporal Coastal changes: Using Lidar Data
* Relative comparison of rill network evolution in two similar soil-mantled experimental landscapes
* Suitability Assessment for the habitat of Blanding’s Turtle in the Western part of Erie County
* Estimating optimal spatial location for Offshore Windfarms using Spatio-Temporal Kriging
* Renderer Menu Tool - an ArcGIS menu that allows changing the rendering of LAS datasets with different selection buttons using C#
* Transparency Tool - which allows user to change the transparency of a shapefile in ArcMap

Over the years, I have acquired technological skills like **web programming** (HTML, JavaScript, VB Script), **computer programming** (C++, C#, Java, Visual Basics, R script, Python), **database design** and use (Microsoft Access & SQL) and **software** like RiPROCESS, POSPac, ArcGIS, AutoCAD, R Studio, FME, ENVI, Matlab, SPSS, Microsoft Office 2016, Visual Studio.

As an experienced Analyst, I am able to responsibly **lead**, **manage** and **supervise** GIS and LiDAR projects. I gained the expertise to **teach**, **assist**, **coordinate** and **organize** different Geography and GIS courses along with a culmination of academic prowess.

I enjoy implementing **LEAN (Six Sigma)** methodologies for **process improvement**. I am a **quick learner**, **team player**, **quality-oriented** with **management**, **leadership**, and **problem-solving skills**.

I have enclosed my resume with the application, which provides more details of my skills and projects.

Sincerely,

**Manita Choudhary**.



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PROFESSIONAL EXPERIENCE

Lidar and Photography Analyst

Fugro Canada | Toronto | Jan 2020 - Sept 2020

* + Supported Fugro’s Asset Management team by leading and supervising all LiDAR projects
  + Provided geospatial production management support, data processing, data analysis, problem-solving and task management
  + Daily production oversight and reporting for all geospatial related projects using LEAN methodologies (KanBan, Kaizen, KPI etc.)
  + Ensured data quality is optimal by applying QA/QC principles for both LiDAR and Photogrammetry projects
  + In charge of creating Standard Operating Procedure (SOP), training videos and documents as part of knowledge sharing

FUGRO PROJECTS

LiDAR Projects

* + Utilized POSPac for Post-processing of trajectory of LiDAR data and then employed RiPROCESS to process, analyze, manage, and visualize mobile laser scanning data (MLS)
  + Transformed raw MLS data to widely used, geo-referenced LAS format for further analysis
  + Projects: Sugarland (Texas, USA), Virginia (USA), Houston, etc.

Photogrammetry Projects

* Performed Photogrammetry analysis to extract different assets to support government transportation departments and private entities in condition monitoring, identification of deficiencies and enabling prioritization of roadwork
* QA/QC the asset extraction process and output to maintain the high grade of the product
* Projects: Arizona, Abu Dhabi (UAE), Alaska, Colorado, Dallas, Kansas City, Richardson, Toronto, etc.

ACADEMIC EXPERIENCE

Adjunct Instructor - Maps: Earth from Above

State University of New York | Buffalo | Spring 2019

* + Taught the course and developed course materials such as lectures, presentations, readings, assembled course books, exercises and learning modules, projects and exams

Senator - Department of Geography

State University of New York | Buffalo | Fall 2018 - Spring 2019

* + Reported the proceedings of the meetings to the committee and discussed the next plan of operation
  + Voted for additional funding requirements of any department
  + Proposed amendments by petition whenever required

Course Assistant - Web based GIS

State University of New York | Buffalo | Fall 2016

* + Developed course materials such as lectures, presentations (using R markdown), and readings, exercises, learning modules and assembled course books

Teaching Assistant - Earth Science and Systems II

State University of New York | Buffalo | Spring 2015, 2016, Fall 2015

* + Organized and taught the Lab component of the Earth Science and Systems II course

Graduate Assistant - GIAL Lab Attendant

State University of New York | Buffalo | Fall 2012, 2014, Spring 2013

* + Invited speakers, managed workshops for students in the Department of Geography, assisted students in the GIS lab, etc.

ABOUT ME

As an experienced Analyst, I am able to responsibly lead, manage and supervise GIS and LiDAR projects. I gained the expertise to teach, assist, manage and organize different Geography and GIS courses along with a culmination of academic prowess.

I enjoy implementing LEAN (Six Sigma) methodologies for process improvement. A quick learner, team player, quality-oriented with management, leadership, and problem-solving skills.

CERTIFICATION

CARTOGRAPHY

ESRI, 2021

LEAN GREEN BELT (Six Sigma)

QCDMS Consultants, 2020

EXPERTISE

PROGRAMMING SKILLS

C, C++, C#, R Script, Visual Basics, Java, SQL, JavaScript, VB Script, HTML, Python.

APPLICATION/TOOLS

RiPROCESS, POSPac, ArcGIS Pro, ArcGIS Hub, FME, R Studio, MapInfo, ENVY, Visual Studio, Adobe Contribute, Google Earth, Google SketchUp, Matlab, SPSS, GeoProMT, Microsoft Office, AutoCAD, Adobe Photoshop, Adobe

Premiere Pro CS5.5.



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KEY SKILLS

LiDAR, GIS, Cartography, Coastal Geomorphology, Geoprocessing, Course Coordinator, Research, Problem Solving, Team player, Public Speaking, Project Management, Leadership, Process Improvement.

EDUCATION

Masters of Science in GIS

State University of New York at Buffalo

2017-2019

Masters of Arts in Geography

Major - GIS, Coastal Geomorphology

University of Mumbai

2010-2012

Bachelor of Arts in Geography

University of Mumbai

2006-2009

Bachelor of Computer Applications

Major - Advanced Java

Tilak Maharashtra Vidyapeeth

2006-2009

CHECK OUT LINKS

[LinkedIn](http://www.linkedin.com/in/manita-choudhary)

[GitHub GeoPortfolio](https://manita-choudhary.github.io/)

[Rate My Professor](https://www.ratemyprofessors.com/ShowRatings.jsp?tid=1854075)

[Story Maps Portfolio](https://storymaps.arcgis.com/stories/28ccd68df46a45f2879f5b5c5e08e71f)

ACADEMIC EXPERIENCE (Continued)

Lecturer - Earth Science and Systems I

State University of New York | Buffalo | Summer 2013, 2014

* + Organized and taught the course of Earth Science and Systems

Teaching Assistant - Earth Science and Systems I

State University of New York | Buffalo | Spring 2014

* + Assisted the professor to give students additional attention and instruction
  + Taught and supervised the class when the professor was on leave

Graduate Assistant - Administration Office

State University of New York | Buffalo | Spring 2013

* Maintained Geography Department website using Adobe Contribute
* Helped professors set up or update their websites

Teaching Assistant - Web-based GIS

State University of New York | Buffalo | Fall 2012

* Organized and taught the lab component of Web-based GIS course

ACADEMIC PROJECTS

Estimating optimal spatial location for Offshore Wind farms using Spatio-Temporal Kriging

* Calculated the distribution of wind over time and space in Long Island (New York) to estimate optimal spatial locations for offshore wind farms
* Spatio-Temporal (ST) Kriging in R script was utilized to find the potential wind energy source locations

Suitability Assessment for the habitat of Blanding’s Turtle in the Western part of Erie County

* Applied logistic regression model with sightings of turtle, land cover, elevation, proximity to water bodies & transportation networks
* Coefficients were derived using SPSS and ArcGIS was used for the rest of the suitability analysis

Relative comparison of rill network evolution in two similar soil-mantled experimental landscape

* Hydrologic analysis on Digital Elevation Models (DEMs) derived from experimental landscapes, which were simulated with artificial rainfall and downstream decrement of elevation

Monitoring Spatio-Temporal Coastal changes: Using LiDAR Data

* Performed 3D analysis which was backed by photogrammetric analysis with the methodology based on identifying photographic, cartographic and photogrammetric evidence regarding the coastal topographic change
* This identification involved data acquisition, preprocessing, importation in ArcGIS, reclassification (if needed), data analysis, and finally, Spatio-temporal analysis and visualization

Renderer Menu Tool –

Created an ArcGIS Menu using C# which allows to change the rendering of LAS datasets with selection buttons:

* Default Fill Symbol - Changes the shapefile to one color
* Class Breaks Renderer - Changes the shapefile color using class breaks
* Unique Value Renderer - Changes the shapefile color using a unique value

Integrated Coastal Zone Management: Ice Jams

* A detailed report of deterministic decision making based on cost-benefit analysis and standard engineering approach of some stakeholders
* Devised a simplified version of the Watershed Planning Process from CATTARAUGUS CREEK WATERSHED RESOURCE GUIDE