

# SUMANT BAGRI

## Masters Student (MScAC) @ University of Toronto

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👤 SumantBagri

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📍 Ontario, Canada

## EXPERIENCE

### Trading Operations Engineer

#### Flow Traders Asia Pte. Ltd

📅 Oct 2020 – Apr 2022

📍 Hong Kong, Hong Kong

- Manage, maintain and optimize all internal, software and hardware stacks largely integrated with the Linux kernel
- Work with development to build and test exchange APIs for different APAC markets
- Implement automated ops-engines and relevant monitoring tools improving control and enabling streamlined deliveries

### Data Analyst Intern

#### FOCUS Analytics

📅 May 2017 – Aug 2017

📍 Mumbai, India

- Leveraged explicit insights from Watson Analytics to enhance the firm's recommender system for targeted marketing improving CTR by 20%
- Residential and work-place determination of users using data clustering algorithm, DBSCAN
- Implement a distributed analytics pipeline using MapReduce on DDfs

## RESEARCH/ACADEMIC PROJECTS

### Comparison of Sampling-Based Path Planners

📅 Dec 2022

📍 UofT, Canada

- Performed a comparative study of three asymptotically optimal, sampling-based path-planners - FMT\*, BIT\* and NRRT\* algorithms. Evaluated optimal path costs, execution times as well as success rates through simulations on characteristically different 2D maps with varying sample counts

### Synthetic Image Generation of Brain Tumor MRI Scans

📅 Nov 2022

📍 UofT, Canada

- Implemented three different GAN architectures - DCGAN, WGAN and UNet-GAN - for synthetic image generation using PyTorch. Trained a CNN model for brain-tumor classification using synthetic images which achieved 90% accuracy on real images

### Autonomous Navigation and Obstacle Avoidance Robot

📅 Oct 2018

📍 UofT, Canada

- Implemented a depth first search (DFS) path planning algorithm in C++ for self-localization of robot. Enabled optimal collision detection using 8 ultrasonic sensors and implemented PID control for obstacle avoidance

## EDUCATION

### MSc, Applied Computing

#### University of Toronto, Department of Computer Science

📅 Toronto, Sept 2022 – December 2023\*

**Courses :** Introduction to Machine Learning, Introduction to Mobile Robotics, Computational Imaging, Visual and Mobile Computing Systems, Neural Networks and Deep Learning

### B.Tech and M.Tech, Mechanical Engineering

#### IIT Bombay

📅 India, Aug 2015 – Aug 2020

Minor in Electrical Engineering

## PUBLICATIONS

### 📄 Journal Articles

- Bagri, S., Manwar, A., Varghese, A., Mujumdar, S., & Joshi, S. S. (2021). Tool wear and remaining useful life prediction in micro-milling along complex tool paths using neural networks. *Journal of Manufacturing Processes*, 71, 679–698.

## PROFESSIONAL SKILLS

Programming Languages: C/C++ Python

Robotics/CV: ROS Gazebo OpenCV

Machine Learning: PyTorch TensorFlow

Cloud Computing: Kubernetes Docker

Distributed Computing: Hadoop Disco

Data Streaming: Kafka ELK Stack

Databases: BigQuery PostgreSQL MariaDB