

# SOUGATO BAGCHI

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## EDUCATION

**Master of Science: Computer Science & Engineering, University at Buffalo** (Ongoing, expected graduation 2023) | GPA – 3.5/4

Fall 2021

**Bachelor of Engineering: Computer Science & Engineering, UEM Kolkata, India.** | GPA – 9.2/10

Spring 2019

## WORK EXPERIENCE

### Applied Research Works, Inc. | ML Intern

June 2022 – Aug 2022

- Data preprocessing & Feature selection.
- Implemented DNN model to compare the performance of care gap prediction w.r.t tradition models like Logistic regression.
- Created a rank-based feature comparison system for better data quality review.
- Implemented Associative Rule mining to understand better the relationship between social determinant features and care gaps.
- **Tools & Technologies** - Python

### University at Buffalo | Teaching Assistant

Feb 2022 – May 2022

- Grading students' projects based on ROS.
- Reviewing and grading students' midterm & final exam answer sheets.
- Helping the students to better understand the subject by quick solving their doubts.
- **Tools & Technologies** – Ubuntu, Python, C++, Robot Operating System (ROS)

### Assistant Systems Engineer | Tata Consultancy Services:

May 2019 – Nov 2020

- Understanding clients' requirements and process them as per business requirements.
- Data visualization & analysis using inbuilt Salesforce tools & MS Excel.
- Creating a communication bridge between the Devs & Clients for understanding new business requirements.
- **Tools & Technologies** – Apex programming language, SQL, Salesforce CRM

## PROJECTS/PUBLICATIONS

### Biometrics system based on Dorsal Hand vein images

Spring 2022 – Fall 2022

- Data collection of the subjects' back side of the palm image captured using IR (infrared) illumination.
- Finding the ROI and enhancing the contrast of the veins.
- Using DNN models to train our model so that it can work as a properly authenticate a person using their data.

### Research project on SLAM (OPEN\_VINS)

Spring 2022 – Fall 2022

- Understanding of SLAM (Simultaneous Localization & Mapping) systems, using different Extended Kalman Filters

### Designing autonomous car using the F1tenth platform:

Fall 2021

- Worked on Robot navigation (using algorithms like Bug2 and shortest path algorithm A\*)
- **Tools & Technologies** - ROS (language used Python & C++)

### Image Stitching & Panorama (Computer Vision):

Spring 2021

- Use multiple images captured from a single camera to form a panorama & background removal after image stitching.
- **Tools & Technologies** – Python

### Hepatocellular Carcinoma Survival Prediction Using Neural Network:

Fall 2018

- Implemented neural network into the HCC dataset (obtained from UCI Machine Learning Repository) and compare with traditional ML models.
- [https://link.springer.com/chapter/10.1007/978-981-13-1544-2\\_28](https://link.springer.com/chapter/10.1007/978-981-13-1544-2_28)
- **Tools & Technologies** – Python, Keras & TensorFlow

### Quantitative Rainfall Prediction using Neural Network:

Fall 2018

- With an accumulated data of 7 years of rainfall obtained from Indian Statistical Institute, Kolkata), a deep neural network-based model was implemented to predict the quantity of the rainfall.
- [https://link.springer.com/chapter/10.1007/978-981-13-1544-2\\_37](https://link.springer.com/chapter/10.1007/978-981-13-1544-2_37)
- **Tools & Technologies** – Python, Keras & TensorFlow

## SKILLS & TOOLS

**Languages:** C, C++, Python, MATLAB, Java, SQL.

**Skills:** ROS (robot operating system), Machine Learning (using Keras, Pytorch)

**Tools:** Spyder, VS code.

## COURSE SUBJECTS

- Robotics Algorithms | Fall 2021
- Introduction to Computer Vision & Image Processing | Spring 2022
- Biometrics & Image Analysis | Spring 2022
- Introduction to Pattern Recognition | Fall 2021
- Algorithms, Analysis & Design | Fall 2021
- Modern Networking Concepts | Fall 2021

## OTHER EXPERIENCE

MOOC Courses –

- **Financial Markets (Coursera) | Yale University**
- **Computer Vision Basics (Coursera) | University at Buffalo**