

SOUGATO BAGCHI

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<https://scholar.google.com/citations?user=5L6iC3MAAAAJ&hl=en&oi=ao>

EDUCATION

Master of Science: Computer Science & Engineering, University at Buffalo (expected graduation June 2023) | GPA – 3.5/4
Bachelor of Engineering: Computer Science & Engineering, UEM Kolkata, India. | GPA – 9.2/10

Fall 2022
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

University at Buffalo | Grader Assistant (Robotics Algorithm)

Feb 2022 – May 2022

- Grading students' projects
- Reviewing and grading students' exam answer sheets
- Helping the students to better understand the subject by quick solving their doubts

University at Buffalo | Research Assistant

Oct 2022 – Present

- Working in **Human-Robot Interaction** to make Robots behave as sentient beings. Implemented various features like
- Identifying its master by Face/Voice authentication
- Implementing SLAM (Simultaneous Localization & Mapping) like algorithms, to help the robots perceive & localize itself in an unknown environment
- Understand natural language commands
- Robots used:- SoftBank Nao6 & Pepper, BostonDynamics Spot

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

Research project on SLAM systems

Spring 2022 – Fall 2022

- Characterizing Kalman Filters based SLAM (Simultaneous Localization & Mapping) systems like the OPENVINS
- Comparative study between the OPEN_VINS & other types of SLAM systems like ORB_SLAM
- Understanding the concurrency issues in these systems
- Mentor: Prof. Karthik Dantu

Robotics Algorithm Projects:

Fall 2021

- Implementation of Obstacle avoidance on the F1tenth virtual platform
- Worked on Robot navigation using algorithms like Bug2
- Finding the shortest path using A* algorithm

Image Stitching & Panorama (Computer Vision):

Spring 2021

- Use multiple images captured from a single camera to form a panorama & background removal after image stitching

PUBLICATIONS

Biometrics system based on Dorsal Hand vein images

Fall 2022

- Data collection of the dorsal side of the hand 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
- <https://ieeexplore.ieee.org/abstract/document/9982726>
- Poster presented at Rochester Institute of Technology for 2022 IEEE WNYISPW event
- Received the Honorable Mention at the [Annual Agrusa Innovation Competition 2022](#)

Hepatocellular Carcinoma Survival Prediction Using Neural Network:

Fall 2018

- Implemented neural network model for the HCC dataset (obtained from UCI Machine Learning Repository) and compare with traditional ML models to predict the survival time of the patients
- 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

SKILLS & TOOLS

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

Skills: ROS (robot operating system), PyTorch

Tools: Spyder, VS code, Salesforce CRM