SOUGATO BAGCHI

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EDUCATION

Master of Science: Computer Science & Engineering, University at Buffalo (expected graduation Feb 2023) | GPA – 3.5/4 **Spring 2022**

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 | 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
- **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

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
- **Tools & Technologies** – ROS (language used Python & C++)

Working on Softbank NAO6 | Research Assistant: **Fall 2022**

- Understanding the functionalities of the newly acquired NAO6 of University at Buffalo
- Demonstration of the NAO6 with some demos at UB IAD (Institute of AI & Data Science) on Oct 21st
- Working on person detection and creating unique reaction per person
- Mentor: Prof. Nalini Ratha

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

PUBLICATIONS

Biometrics system based on Dorsal Hand vein images **Spring 2022 – 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
- Paper accepted with reference "979-8-3503-9978-3/22/$31.00 ©2022 IEEE"
- Poster presented at Rochester Institute of Technology for 2022 IEEE WNYISPW event
- **Tools & Technologies –** Python**,** PyTorch

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**
- **Tools & Technologies –** Python, Keras & TensorFlow

SKILLS & TOOLS

Languages: C, C++, Python, MATLAB.
Skills: ROS (robot operating system), PyTorch
Tools: Spyder, VS code

COURSE SUBJECTS

- CSE 702 – Geometric & Visual Robot Learning | Fall 2022
- Robotics Algorithms | Fall 2021
- Introduction to Computer Vision & Image Processing | Spring 2022
- Biometrics & Image Analysis | Spring 2022
- Data Intensive Computing | Fall 2022
- Introduction to Pattern Recognition | Fall 2021
- Algorithms, Analysis & Design | Fall 2021
- Modern Networking Concepts | Fall 2021