

# SHREYA SAHA

La Jolla, CA-92037

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## EDUCATION

**University of California, San Diego**

Master of Science in Computer Science

**September 2021-Present**

**CGPA - 4.0**

**National Institute of Technology, Durgapur, India**

Bachelor of Technology in Computer Science and Engineering

**2015-2019**

**CGPA - 9.14/10**

## RESEARCH PROJECTS

**Title: Domain Adaptation Using Neural Architecture Search**

**2021- Present**

**Advisor - Pengtao Xie**

- Used a multi-level skill learn based optimization approach to decompose domain and class specific representations
- Used differentiable Neural Architecture Search methods (DARTS, P-DARTS and PC-DARTS) to train the architecture of the domain classifier
- Datasets being used - OfficeHome and Office31

**Title: Visual Matrix Prediction**

**2022- Present**

**Advisor - Pengtao Xie, Alireza Kamalipour**

- Use Optic nerve head images of eyes to predict 10-2 and 24-2 visual matrix
- Best MAE score: 3.01 and best correlation coefficient: 0.72

**Title: Gene Expression Analysis**

**2022- Present**

**Advisor - Debashish Sahoo**

- Processing solid cancer genome datasets from Gene Expression Omnibus (GEO) website to hegemon website created by Boolean Lab.
- Analyzing and validating invariant biomarkers for White Blood Cells using BECC technique
- Designing primers to duplicate genes from a given genome sequence

**Title: PUF based Protocol for Secure WiFi Authentication of IoT devices**

**2017-2019**

**Advisor - Bibhash Sen**

- Used Physically Unclonable Functions(PUFs) to secure IoT devices against WiFi attacks via xor encryption of the challenge-response pairs of the PUF, MAC address of the connecting device and a random number nonce

## ACADEMIC COURSE PROJECTS

**Title: Robot Motion Planner Using a Jetbot**

**2021**

- Designed a 'roomba' like system using Voronoi path planner and KALMAN filter based SLAM techniques that would navigate through the environment using artificial landmarks (April tags).

**Title: Python Compiler Using Typescript and WASM**

**2022**

- Designed a python compiler that takes care of comprehension (lists, maps and tuples) statements
- Collaborated with 50 other students to integrate the above functionalities with other python expressions (namely lists, conditional expressions, built-in libraries and memory management)

## INTERSHIPS AND PROFESSIONAL EXPERIENCE

## **Meta (Facebook)**

### **Software Engineering Intern at Facebook Marketplace Intelligence**

**June 2022 - September 2022**

- Part of the Facebook Marketplace Product Intelligence team
- Worked on investigating the causes for low quality data that leads to poor performance by ML models
- Created additional Artificial data to train the marketplace ML models

## **J P Morgan and Chase, Bengaluru, India**

### **Software Developer I**

**July 2019-December 2020**

### **Software Developer II**

**January 2021- August 2021**

- Designed a CQRS framework that helped automate user requests without manual intervention using the axon framework
- Developed various microservices for the above framework and helped other teams onboard to this framework

### **Software Engineering Intern**

**May 2018 -July 2018**

- Built an UI framework on top of Flower (a web based tool for monitoring Celery events) that visualized the various stages of a user task.

## **Revotic Engineering (Startup)**

### **Software Engineering Intern**

**October 2018-January 2019**

- Built a python REST API on top of ipfs.io which allows the user to perform various InterPlanetary File System (ipfs) functionalities
- Built a desktop application that allows the client to perform ipfs functions locally

## **Indian Institute of Technology, Bombay**

### **Software Engineering Intern**

**May 2017-July 2017**

- Built a platform (XBlock) to help teachers conduct online examinations, automatically grade the student's work and graphically display the student's performance.

## **TEACHING EXPERIENCE**

### **University of California, San Diego**

#### **Teaching Assistant**

**Course** - Advanced Data Structures (CSE 100)

**Spring 2022**

**Course** - Theory of Computation (CSE 105)

**Fall 2021, Fall 2022**

- Hold office hours and discussion sessions to clear doubts and discuss common problems and grade assignments

## **PUBLICATIONS**

- Mahabub Hasan Mahalat, Shreya Saha, Anindan Mondal and Bibhash Sen, "A PUF based Light Weight Protocol for Secure WiFi Authentication of IoT devices", 2018 Eighth International Symposium on Embedded Computing and System Design (ISED)
- Shachindra, Sagar Ganiga, Shreya Saha, Anish Mishra, Meit Maheshwari and Gaurv Kumar, "Secure and Decentralized Live Streaming using Blockchain and IPFS -Workshop", 2019 Third Workshop on Blockchain Technologies and its Applications