MRINMOY SONOWAL

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LANGUAGES: **Python** (4 yrs), **Java** (2 yrs), **C/C++** (1yr), **SQL** (1 yr), **Swift** (3mos), **Objective-C** (3mos), **Haskell** (1 yr), **Dart/Flutter** (3mos), **JS - React** (3mos)

EDUCATION AND QUALIFICATIONS

UNIVERSITY OF EDINBURGH, BSC (HONS.) ARTIFICIAL INTELLIGENCE AND COMPUTER SCIENCE   *SEP'19-MAY'23*

- Relevant courses: Algorithms and data structures, machine learning & deep learning, data science, software engineering, natural language processing, system design project, text technologies (information retrieval & text analysis), computer communication and operating systems.
- 2019-2020: Edinburgh Award (Work Experience) for creating a mobile app to connect university students during the pandemic.
- 2020-2021: Won the Institute of Physics award to promote diversity and inclusion. I mentored a group at Hello World Hackathon to build a website (using **HTML**, **CSS**, and **Firebase**) to promote tutoring.

WORK EXPERIENCE

DEMONSTRATOR - UNIVERSITY OF EDINBURGH   *SEP'21-MAY'23*

- Run university classes to teach algorithms and data structures, functional programming, introduction to computation, software engineering, nlp and computer systems.
- Skills: Teamwork, communication, problem-solving and leadership, programming in **python, java, Haskell, nltk** and logic.

SOFTWARE ENGINEERING INTERN – AMAZON, PRIME VIDEO, iOS   *JUN'22-SEPT'22*

- Worked on the client facing macOS app with a **scrum** team - delivered project updates and daily stand ups.
- Demonstrated **strong ownership** of the project including *going the extra mile* to ask sister teams about similar projects.
- Used **CI/CD pipelines** to build, test and deploy code on internal repositories.
- Used **git** to maintain workflow, open code reviews, merge, and squash commits.
- Extensively used **swift** and **objective-c** *bridging classes, lifecycle methods and view controllers* to create and update features.
- Learned about operational tasks such as metrics collection and analysis, testing and bug fixing during a high paced live event (Thursday night football – prime).
- Skills: Teamwork, communication, project management, time bound delivery, git, Xcode and iOS development.

TECHNICAL PROJECTS

DISSERTATION – APPLICATION OF NETWORK SCIENCE IN HEALTHCARE   *SEP'22-APR'23*

- Implemented *stochastic block models* (SBM) to create disease clusters – each patient's diseases mapped to clusters. (**Python**)
- Clusters used as features to predict mortality among patients in pre-existing dataset.
- Cluster membership determined through *set intersection* of cluster diseases and patient diseases.
- Wrote maintainable code, gained research experience, handled sensitive data, and gained further ML experience.
- Achieved a 1st class result.

SEARCH ENGINE - STORYHUNTER   *SEP'22-MAR'23*

- Developed a search engine using **information retrieval** concepts in a team of 6 with large scale data **(>100GB)** from the A03 website. (**Python**)
- Worked on retrieving data from SQL databases using coalescing and join queries to one data structure. (**SQL**)
- Implemented *boolean, phrase and proximity search* and built the ranked retrieval search using *tfidf* scores.
- Developed application-level network using **FAST-API** – handling multi-client queries and server responses.
- Reduced client server latency by 50% and enabled *concurrency* – 1000+ search results under 1 second. (**FAST-API**)
- Wrote maintainable and neat code by structuring classes, commenting, *code quality* and coding conventions.

InfOS – OPERATING SYSTEMS COURSEWORK   *JAN-MAR'23*

- Implemented *round-robin and FIFO, MLFQ process scheduler*. (**C/C++**)
- Designed and implemented a buddy memory allocator for the OS.
- Built a file buffer cache over the ATA using both *FIFO* and *LRU*.
- Maintained documentation and wrote technical and design description.

SHORTQ (CO-FOUNDER)   *2021-2023*

- Made an android app to handle patient queues during the pandemic. (**Android Studio, Java**)
- Improved the payment system and thereby reduced user complaints by 25%.
- Reached **1000+ users** in the first deployment cycle, reducing crowding by 50%.
- Designed and implemented the profile class. (**android**)
- Shifting to web-based app to improve user base, where I implemented the booking calendar. (**React**)
- Worked on analysis, design, implementation, maintainability, and code quality.

DRONE DELIVERY SYSTEM   *SEP-DEC'21*

- Constructed an algorithm to efficiently deliver the orders to virtual *geojson* location objects avoiding no fly zones. (**Java**)
- Captured requirements by identifying key system states, stakeholders, use cases, and non-functional requirements.
- Developed the class, communication, and sequence diagrams for the system.

- Fetched JSON data from the **Apache Derby** server and interfaced it to the **java** class using GSon.
- Implemented *system level tests* and *unit tests* for the respective use cases and overall system, using **Junit5**.

ACTIVITIES / LEADERSHIP

PROGRAMME REPRESENTATIVE – UOE SCHOOL OF INFORMATICS

OCT'22-JUN'23

- Link between students and staff to improve the student university experience.
- Work along with the school representative and other reps to build solutions as a team.
- Handle student feedback and suggest solutions and ideas for the present and future.
- Skills: Communication, problem solving and leadership skills.

ANCHOR - SIAF EDINBURGH DUSSEHRA FESTIVAL

OCT'22

- Hosted in **front of thousands along with members of the Scottish parliament** and Edinburgh council.
- Presented performers and invited dignitaries on stage.
- Skills: Presentation, public speaking, creativity, teamwork, and event coordination.

MENTOR/JUDGE - ADAHACK

OCT'22

- Helped students with Hooper's data science challenge**. (Python, data visualisation, machine learning)**
- Judged projects from 30+ students.
- Provided meaningful feedback and assistance.
- Skills: Leadership, management, event coordination, and education.

INFPALS LEADER

SEP'20-MAY'21

- Lead student sessions in an engaging activity filled way.
- Lead git, Haskell and leetcode sessions, interview preps and job hunt sessions.
- Received positive reviews from students and highest attendance out of all the peer groups.
- Skills: Teamwork, leadership, creativity, and communication skills.

PROJECTS LEAD - EMBEDDED AND ROBOTICS SOCIETY

AUG'20-MAR'21

- Coordinated events online to direct students to use embedded systems.
- Used **python** and **Arduino** (virtual environment) to simulate basic devices.
- Skills: Leadership, management, and event coordination.

SPRING INTERN

AUG'20-MAR'21

- Attended week long events by jp morgan, citadel and morgan stanley.
- Learnt about technology in financial markets and various market products.

ABOUT ME

I am a hardworking, customer driven and resolute learner, who delivers quality work items in a time bound manner. I love to work in a high impact team to make QoL and important product changes. I have also developed a deep interest in scalable systems as proven by my work in both shortq and storyhunter. I have 3 years of mobile experience and I enjoy working on mini projects and coding challenges. Above all, I would love to work in a team that makes a positive impact around the world. My hobbies and interests include travelling, hiking, attending socials and following current affairs. I am energetic, enthusiastic, and willing to put in the extra effort to go the extra mile.

References are available upon request.