



Saptarshi Majumder
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Indian Institute of Technology Bombay

19I190011
M.Sc.
Gender: Male
DOB: 12-01-1998

Examination	University	Institute	Year	CPI / %
Post Graduation	IIT Bombay	IIT Bombay	2022	8.75
Graduation	University of Calcutta	St. Xavier's College	2019	71.04%
Graduation Specialization: Statistics				

WORK EXPERIENCE

Google Summer of Code | Ceph RGW S3 SDK compatibility [Jun'21-Aug'21]
Mentor: Robin Johnson, Principal Cloud Architect, Digitalocean

- **Automated** the setup of running Ceph S3-tests suite against the RGW of the Ceph distributed storage cluster
- **Developed a new tooling** that analyzes coverage of function signatures in **AWS Boto SDK S3** source files against attributed suite of S3-tests and identifies segments of SDK with increased scope for testing coverage
- Extended support by developing a Proof-of-Concept of the coverage analysis tooling using Interval Trees on function signatures for **increased S3 compatibility testing** in the future on other SDKs maintained by AWS

University of Cambridge, England | Research Intern [May'20-Jul'20]
Paper: Depression Status Estimation by Deep Learning based Hybrid Multi-Modal Fusion Model
Guide: Dr. Juned Kadiwala, University of Cambridge

- Co-authored and proposed a novel **hybrid deep learning approach** for preliminary detection of mild depression which immensely helps in effective treatment of the common mental health disorder in all ages
- Achieved a benchmark test accuracy of **96.3%** and a robust AUC score of **0.9682** on the **NHS-DAIC dataset**
- Ideated and tested a **cross-platform mobile application** for collecting GDPR compliant in-patient data at various clinics across England and running the deployed model in the cloud against it for effective diagnosis

KEY PROJECTS AND PUBLICATION

EMRs with Blockchain: A distributed democratised EMR sharing platform [Jul'21]
Publication: Springer LNCS Proceedings of the 4th International Blockchain Conference

- Co-authored and implemented a **novel EMR sharing platform** on top of a Blockchain network to mitigate problems on non-repudiation, immutability and providing data-ownership for personalized treatment
- Proposed a new mechanism for storing **big data** in Blockchain Network by offshoring it to **IPFS** (Interplanetary File System) swarm channels and store the connected keys of bi-level encrypted EMRs in PKCS12 key-store

NLP in Audio analytics | MSc. Phase Project II [Jan'21-May'21]
Guide: Prof. Balamurugan Palaniappan, IIT Bombay

- Reviewed the literature on the application of Transformer models in NLP for learning audio representations
- Achieved a test accuracy of **83.57%** on a downstream task of keyword spotting through speech recognition on a subset of Google's speech-commands dataset using learned **Audio ALBERT** and Mockingjay representations

Lottery ticket Hypothesis [Sep'20-Dec'20]
Guide: Prof. Balamurugan Palaniappan, IIT Bombay | Course Project: Deep Learning - Theory & Practice

- Substantiated the existence of a significantly ($\geq 85\%$) pruned network having comparable accuracy with the original network by validating over LeNet and Feed Forward MLP neural networks on the MNIST dataset
- Inspected the plausibility of transfer learning the lottery tickets over different datasets of the same domain

POSITIONS OF RESPONSIBILITY

PR Head and Core team member | Inter-IIT Tech Meet 9.0 [Mar'21 - Apr'21]

- Co-managed and resolved various logistical issues, team formations as part of a team of 15+ core members
- Achieved the **runners up position** among all IITs bagging 3 gold, 2 silver and 4 bronze medals along the way

Placement Portal Development Team | IIT Bombay [Mar'20 - Dec'20]

- Selected in a core team of 6 members to ideate and develop a brand new placement portal for the institute catering to the needs of **2000+** students, coordinators and recruiters using a **modern full-stack solution**
- Systematically automated old portal functionalities, making the process more extensible and maintainable

TECHNICAL SKILLS

- **Programming Languages:** C, C++, Python, Javascript, Golang, SQL, Bash scripting, HTML, CSS
- **Tools and Technologies:** Docker, Kubernetes, Git, Microservices, AngularTS, Flutter, Apache Kafka, Tensorflow