Mrityunjay Kumar

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EDUCATION

- **Stony Brook University** — New York, USA
  Master of Science in Computer Science, GPA: (3.59/4.0) — *Jan. 2019 – May. 2020 (expected)*

- **Maulana Azad National Institute Of Technology** — Bhopal, India
  Computer Science & Engineering, CGPA: 7.85/10 — *Aug. 2010 – May. 2014*

EXPERIENCE

- **Distributed Systems Lab - Stony Book University** — Jun 2019 - till
  Graduate Research Assistant - Under guidance of Prof. Shuai Mu — *Stony Brook, NY*
  - **Distributed Multi-core Transactional Database**
    * Implementing asynchronous replication with multi-process paxos to remove contention.
    * Implemented replay protocol to guarantee serializibility and wrote verification pipeline for logged streams.
    * Implemented fast header-only/compiled, C++ logging library facilitating aligned memory allocators with features like Rotating log and auto-flush in approx. 1200 LOC.

- **Talentica Software** — April 2016 - Jan 2019
  Senior Software Engineer — *Pune, India*
  - **Estimation & Prediction algorithms for Wireless Systems**
    * Implemented an ingestion pipeline for model deployment using **Storm, Kafka, Python, Java**
    * Achieved 80% overall accuracy in network traffic prediction using **Ensemble regression Tree**.
    * Added an ad-hoc client to Storm topology to support collection of Real-time data to Disk & Batch pipeline using **Java, Spark**.
    * Developed a live BLE asset view portal to support data collection team, adding 70% more correctness to site calibration using **JavaScript, Kafka, Python**.
  - **File Sync Application**
    * Developed a client application update framework to support release notification for multi-talent architecture using **Java, C++, Python**.
  - **Financial Document Search Engine:**
    * Improved search relevancy by 45%. Improved Online Ontology enhancer by 30%, NLP Pipeline for Document Clustering, Keyword Extraction, Text Classification.

- **MediaTek** — Aug 2014 - April 2016
  Software Engineer — *Noida, India*
  - As a **feature owner** of Audio module, implemented design and bug-fixes for new product release. Improved playlist design to reduce playlist update **overload by 25%**, Integrated BT Stack in MMI Layer
  - Wrote Software Layer code for Stress Test based Combo **GPS-WiFi-BT** Tool in VC++

PROJECTS

- **Raft** Implemented Sharded and replicated fault-tolerance key-value store based on raft protocol from scratch in Go.
- **Map-Reduce library** Implemented distributed map reduce library and worker failures from paper.
- **Backup File System in Linux Kernel** Implemented stackable file system with custom Visibility, Retention and Version Management Policy under guidance of **Prof. Erez Zadok** using C and VFS Layer.
- **Encryption based System tool for Linux Kernel** Implemented system call for encrypt/decrypt file using AES provided by kernel crypto API under guidance of **Prof. Erez Zadok** in C.

PROGRAMMING SKILLS

- **Programming Languages:** C, C++, Java, Go, JavaScript, SQL
- **Technologies:** Storm, Spark, Redis, REST, Kafka, AWS, Git/Perforce, MATLAB