

Curriculum Vitae

Arka Roy

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CAREER OBJECTIVE

A focused individual, passionate about solving problem statements in Big Data Analytics and Distributed Machine Learning, Auction Theory, Bid Optimization, and Traffic Shaping.

EDUCATION

National Institute of Technology, Department of Computer Science and Engineering (CSE)

Bachelor of Technology: Computer Science and Engineering, June 2018

Cumulative GPA: **9.09/10.0**

All India Senior School Certificate Examination, March 2014

Examination Score - **94.4%**

Indian Certificate of Secondary Education, March 2012

Examination Score - **93.6%**

PUBLICATIONS

International Symposium on Embedded Computing and System Design (ISED), Dec 2018

Cochin, India

- Evaluation and detection of hardware Trojan for real-time many-core systems

Publication Link: <https://ieeexplore.ieee.org/abstract/document/8703990>

TEACHING EXPERIENCE

- **Competitive Programming Educator at Unacademy, Sep 2016 - Dec 2016**

Course Links: [Segment Tree Theory](#), [ACM ICPC 2015 Solutions](#)

- **Educator at “Hack.Me” classes organized by GNU Linux Users’ Group, Sep 2017 - Dec 2017**

PROFESSIONAL EXPERIENCE

InMobi, Senior Software Engineer (SDE IV), Data Science Team, July 2023 – Present

Bangalore, IN

- Designed and implemented a Long short-term memory (LSTM) network for the traffic shaping layer, which predicts and filters out the profitable ad requests to downstream systems.
The model is written in TensorFlow and trained using Horovod on a dataset of 500M rows.
It resulted in a revenue uplift of 7%.
- Led the Databricks Machine Learning Platform Integration project.
Worked on Feature Store, Model Registry, and Model Serving.
Mentored two folks through the project life cycle.

InMobi, Senior Software Engineer (SDE III), Data Science Team, July 2021 –June 2023

Bangalore, IN

- Created an in-memory predictor for LightGBM Models in the JVM environment, with a prediction latency of 0.2 ms to work at a scale of 500K requests/second.
Published Article: <https://technology.inmobi.com/articles/2022/07/22/bolt-library>
- Created a stacked LightGBM Model to predict app install likelihood for more than 3 billion users.
This project Improved the User Install Conversions (CVR) by 10%

InMobi, Senior Software Engineer (SDE II), Oct 2019 - June 2021

Bangalore, IN

- Led the Project on California Consumer Privacy Act (CCPA), making InMobi CCPA-Compliant.
Created the Right To Forget (RTF), Right to Opt-Out (RTO) and Right to Access (RTA) workflows
- Optimized Apache Spark Workload for Petabytes of Structured Data
This led to a 50% reduced cloud-compute cluster cost.
Published: <https://technology.inmobi.com/articles/2022/06/05/spark-optimization>
- Optimized Apache Flink Pipelines by performing RocksDB Memory Optimisation and JVM Garbage Collection Tuning, which helped scale it to 100K QPS.
- Designed and implemented Timezone Reporting API, to provide locale-specific reporting for advertisers around the world reducing the p99 reporting latency by 50%

InMobi, Software Engineer (SDE I), July 2018 - Sep 2019

Bangalore, IN

- Created a Unique User Reporting Pipeline using HyperLogLog (HLL) Sketch.
This paved the way for advertisers to get a view of unique impressions and clicks at a scale of 10K QPS for clicks and 50K QPS for impressions.
- Migrated production Azure Event Hubs infrastructure to a dedicated cluster with 200K live QPS

AWARDS AND RECOGNITIONS

Top Performer Award, 2022, 2021, and 2020

Bangalore, IN

Received Performance Award for three consecutive years for innovating, implementing, and demonstrating the best performance in the organization.

ACM ICPC Regionals 2016, 2017

Durgapur, IN

Represented NIT Durgapur at the ACM ICPC Regionals at Amritapuri, Kharagpur, Gwalior, and Chennai
Coach: Prof. Debasis Mitra

First Prize, Recursion Programming Contest, 2014

Durgapur, IN

I won the first prize in the programming contest organized by the Recursion Club at NIT Durgapur for first-year students.

Joint Entrance Exam (Mains) May 2014

Kolkata, IN

Achieved a 98.8 percentile with a rank of 13,412 out of 1,356,805 students.

1st Rank Holder, Kendriya Vidyalaya Garden Reach, 2014

Kolkata, IN

I was awarded the first prize for securing the 1st rank in high school.

POSITIONS OF RESPONSIBILITY

General Secretary, GNU Linux Users Group (GLUG), August 2017 - May 2018

Durgapur, IN

- Organized the 2nd largest IoT Hackathon in West Bengal during the inaugural edition of Avishkar Tech Fest
- Created Digital Fortress, which was one of the most engaging quiz web-app based on cryptography in the college fest.

Student Coordinator, Institute Website Team, IT Infrastructure and Services Committee (ITIS), Feb 2018 - May 2018

- *Advisor: Prof. Bibhas Sen, Prof. Saravanan Chandran*

PROJECTS

Undergraduate Thesis, CSE Department, NIT Durgapur July 2017 – May 2018

Durgapur, IN

- Title: Study of Hardware Trojan for Real-Time Many-Core Systems
- Modeled a Hardware Trojan on an ARM-64 multicore processor and studied its impact on the MSI Cache Coherence protocols.
- Worked on its evaluation and detection mechanism using Machine Learning Techniques.
- *Advisor: Prof. Mamata Dalui*

INTERNSHIP AND PROJECTS

Software Engineering Intern, Belzabar Software Design, May 2017 – July 2017

New Delhi, IN

- Worked on permissions, authentication, user management, unit testing, and database modeling for project HyperEmail using Django Rest Framework.

Creator of Digital Fortress App, GNU Linux Users' Group, May 2016 – May 2018

Durgapur, IN

- Digital Fortress is an open-source Google Maps-based quiz game, which became the highest engagement app for two consecutive years during the University's Annual Tech Fest.

Web Development Intern, Ecube Energy, May 2016 – July 2016

Kolkata, IN

- I developed software from scratch to generate energy analytics reports using efficient algorithms and create dashboards based on energy consumption data feeds from various textile industries.

EXTRACURRICULAR ACTIVITIES

Diploma in Drawing, Bangiya Sangeet Parishad.

Howrah, IN

Completed 7 years of a professional drawing program with a First Division (Distinction) Certificate.

Played Cricket at the Under-16 Tournament organized by Cricket Association of Bengal.

Howrah, IN

Represented Howrah Sporting Club for 2 years