

EDUCATION

Master of Science, Computer Science and Engineering, University of California San Diego Sep 2021 — present
Bachelor of Engineering, Computer Science, Birla Institute of Technology and Science, Pilani, GPA: 9.98/10.00 Aug 2015 — Jun 2019

PROFESSIONAL EXPERIENCE

AI Researcher 1 Jul 2019 — Jul 2021
AI Labs, American Express (Amex) Bengaluru, India

- Reduced the time taken for quantile building (upto 4x on UCI datasets) while maintaining model performance of distributed XGBoost algorithm by using random sampling instead of weighted quantile sketch.
- Developed an end-to-end system that enables context-aware search for enterprise-wide unstructured information retrieval with internal user tests showing 73% of the queries answered in the top 10 results.
- Developed and maintained features for AXGBoost algorithm (4 releases). Designed class architectures and improved the distributed algorithm code base for better readability from a 2400+ lines code to <500 lines in C++ (has been used in building 10,000+ models).

Research Intern Jan 2019 — Jun 2019
AI Labs, American Express (Amex) Bengaluru, India

- Developed the Selective Binning functionality for Split Point Proposal in distributed AXGBoost, which improved the capture rate on Amex datasets by 4%.
- Inherited functionality from XGBoost to design and implement the architecture for CSV data reading in AXGBoost along with additional support for column distributed data reading.

Summer Analyst May 2018 — Jul 2018
Goldman Sachs Bengaluru, India

- Developed a generic parallel email scanner which enables easy access to conversations that happened for a deal, using Java Spring Framework and Microsoft Exchange Services.
- Set up RabbitMQ queues for storing mails at intermediate steps, processed the mails to remove redundant information using text processing techniques, and finally stored them in MongoDB.

Summer Intern May 2017 — Jul 2017
Knowledge Lab, Homi Bhabha Centre for Science Education Mumbai, India

- Developed a feature-rich offline search engine using Django for a digital learning platform (CLIX) to enable quick content access in schools with no internet connectivity (deployed in 500 government schools).
- Implemented functions to support suggestions, advanced triplet search, contribution search, and search filters.

PROJECTS

- Developed a **parallel K-Medoids algorithm** using Adaptive Gridding in Java Spark, which improved the algorithm's efficiency of selecting initial medoids (improved 10x) without compromising on the clustering error. Jan 2018 — Dec 2018
- Created a **Bayesian Belief Network** based on grades of students for assessing teaching pedagogies by modelling natural language queries as conditional probabilities. Sep 2018 — Oct 2018
- Designed a **parallel algorithm using Foster's Design methodology** having logarithmic speedup compared to sequential algorithm which facilitates joining and leaving of peers in a peer-to-peer network. Apr 2018 — May 2018
- Developed **lexical, syntax, semantic analyzers, and code generator modules of a compiler** for a language in C. Implemented functionalities to support simple functions, simple matrix operations, and conditional statements. Jan 2018 — Apr 2018
- Designed a **parallel algorithm for word document index creation** using OpenMP in C++ for a file system with 200k files; reduced index creation time from 43 seconds on 1 CPU core to 9 seconds on 32 CPU cores. Jan 2018 — Feb 2018

TECHNICAL SKILLS

Programming/Scripting C, C++, Java, Python, R, Scala, Scheme, MPI, OpenMP, Spark Java, Django

AWARDS AND EXTRA CURRICULAR ACTIVITIES

- Drives Results Award: Awarded in the AI Labs town hall at Amex for my contribution to AXGBoost. Feb 2021
- Volunteered to take English lessons virtually for 40 security guards at Amex. Feb 2021
- Google AI Summer School HCI+AI for Social Good Track: among the 50 students selected for the school. Aug 2020
- BITS Silver Medalist: Awarded silver medal for being ranked 2nd among 900 students in my undergraduate. Jul 2019
- BITS Merit Scholar: Received 80% Scholarship for being in the top 1% in all semesters. Aug 2015 — Jun 2019