Partha Dhar

Senior Undergraduate
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Satpura House
Indian Institute of Technology Delhi
Hauz Khas, New Delhi

Education

Indian Institute of Technology Delhi — *July 2017 – Present*
Computer Science and Engineering, Minor in Economics — GPA: 9.71/10

Delhi Public School Noida — *April 2003 - March 2017*
Class XII — 96.2%
Class X — GPA: 10/10

Experience

Rubrik, Inc. — Remote
Software Engineering Intern — Team Galactus — *April 2020 - July 2020*

- Created a unified interface for sharing Azure access tokens to allow multiple jobs using the same resource to run in parallel
- Handled deadlocks and race conditions at the database to allow simultaneous requests for the same token while being scalable
- Ensured security by adding encryption using Google Cloud KMS and additional checks across multiple layers to prevent leakage
- Deployed to production for all Polaris customers, resolving 1000+ failures seen each month; Received an FTE return offer

McGill University — Montreal, Canada
Research Intern — Institute of Health & Social Policy (Prof. Chris Barrington-Leigh) — *May 2019 - July 2019*

- Developed an open-source Python package for interfacing with Stata, keeping data and results as Pandas DataFrames
- Added support for various statistical models such as ordinary least squares, logistic regression and local polynomial smoothing
- Received funding of CAD 7,000 as a part of selection in the *Mitacs Globalink Research Internship* program

Projects

PageRank using MapReduce — Prof. Rijurekha Sen
Course Project — Parallel and Distributed Computing — *March 2020 - May 2020*

- Implemented the PageRank algorithm using three different variations of MapReduce to compare performance on benchmarks
- Achieved 3x speedup over existing standard libraries using our custom MapReduce implementation built with C++ MPI

Secure Chat Application — Prof. Aaditeshwar Seth
Course Project — Computer Networks — *August 2019 - September 2019*

- Designed multi-threaded server and client implementations for communication using an HTTP-like protocol over TCP sockets
- Ensured end-to-end security using RSA public-private key encryption and message integrity via digital signatures in Java

Functional Language Interpreter in OCaml — Prof. Sanjiva Prasad
Course Project — Programming Languages — *January 2019 - May 2019*

- Implemented type-checking, scanning, parsing, CBV and CBN semantics for boolean and big-integer expressions
- Added support for definitions and recursion using SECD and Krivine machines and built a front-end using OCaml-lex and yacc

Humsafar — Chatbot for transport solutions — Inter IIT Tech Meet
Jio Coding Hackathon — 2^{nd} Runner Up — *December 2018*

- Built using the Microsoft Bot Framework SDK in Node, for hailing Ubers and travel enquiries on cheap feature phones
- Scraped railway data using Python for live status and booking confirmations due to a lack free official/unofficial APIs

Achievements

- **IOITC 2017:** Among the 27 students invited to the training & selection camp for the 29^{th} IOI (Team India)
- **IIT Delhi Merit Award:** In the top 7% in academic performance among 850+ students in semesters I, II, IV and V
- **NTSE Scholar:** Among the top 750 (out of 800,000+ students) in the National Talent Search Examination 2015
- **KVPY Fellow:** All India Rank 168 (out of 100,000+ students) in KVPY(SA) 2015 conducted by Government of India
- **B-83 Merit Award:** Among 13 students awarded the scholarship for a stellar academic record, funded by the batch of 1983
- **DISA 2018:** Received the *Design Innovation Summer Award* for the project *Automation of Thermoforming Machine*

Technical Skills

Python, C++, GoLang, OCaml, Java, MATLAB, VHDL, ARM Assembly, HTML, CSS, JavaScript, Git, MapReduce, Protobuf

Relevant Coursework

Data Structures & Algorithms, Discrete Math, Probability & Stochastic Processes, Digital Logic & System Design, Design Practices, Programming Languages, Computer Architecture, Artificial Intelligence, Networks, Algorithm Design, Operating Systems, Machine Learning, Parallel & Distributed Computing, Theory of Computation, Algorithmic Game Theory