Shiladitya Biswas

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Education

Program	Institution
M.Tech. (CSE) - **2019**	IIT Madras
B.E. (CSE) - **2014**	IIEST, Shibpur

Industry Experience

Ericsson India Global Services Pvt. Ltd. – *Solution Integrator* (2015 - 2017)

- Worked on Ericssonś Telecommunication Billing and Charging Systems.
- Worked on projects with customers like AMX, TSTT, Entel Chile/Peru and Saudi Telecom.
- My work included Billing infrastructure setup like Environment Creation/Restoration, DMF execution, Authentication, Database Creation, Cloning, Data pumping etc.
- Developed various types of report generation scripts for Ericssonś New Generation Voucher Servers.

Academic Projects

1. Analysis and Application of the Dynamic Orienteering Problem **Jan 2018 - Present**

M.Tech. Project – (Guide: NS Narayanaswamy) *IIT Madras*

Skills Used: Approximation Algorithms, Heuristic Algorithms, C++, PHP, Perl

- Orienteering is an optimization problem in routing where the aim is to find a route constrained by a distance budget that visits the maximum number of vertices.
- The problem models many important sub-goals in vehicle routing problems.
- In this work our aim is to study the algorithmic issues in a dynamic setting where the routes have to be updated in the presence of dynamic cost changes in the network.

2. Designing a scalable Cache Simulator supporting multiple cores **Feb 2018**

Course Project – (Parallel Computer Architecture) *IIT Madras*

Skills Used: C++, Intel PIN Tool, Cache Memory Internal Structure

- An object oriented cache simulator was designed with scalability and modularity in mind.
- Each entity in cache architecture was an object with abstraction of its functionalities.
- Intel PIN Tool was used to generate memory trace from an application to test the simulator.

3. Simulating Relay Race between threads **Nov 2017**

Course Project – (Computer Architecture) *IIT Madras*

Skills Used: C, pThreads

- Relay Race among 4 different threads and 1 referee thread was simulated using atomic (mutex) locks, barriers and other synchronisation techniques.

4. Cell Selection Scheme For Densely Deployed Femto BS and Wi-fi APs **Aug 2017 - Nov 2017**

Course Project – (Wireless Communication Networks) *IIT Madras*

Skills Used: Java, Eclipse IDE

- Selected the potentially best femtocell based on an empirical calculation of expected bitrate obtained from signal to noise plus interference ratio of various femtocells.
- Looked at the possibility of obtaining unlicensed spectrum based on expected blank frame transmissions of wifi.

Course Work

- **Theory**: Advanced Data Structures and Algorithms, Logic and Combinatorics for Computer Science, Topics in Design and Analysis of Algorithms
- **Systems**: Computer Architecture, Parallel Computer Architecture, Digital Systems Testing, Operating Systems

- **Miscellaneous**: Advanced Programming Lab, Wireless Communication Networks, Ontology

Technical Skills

- **Programming Languages/Technologies**: C, C++, Oracle, Perl, SQL, Ontology Languages
- **HPC**: POSIX Threads, OpenMP, AVX, AVX2
- **Tools/Simulators**: Intel MLC, Gem5, Protege

Achievements

- Named as STAR TA by Department of Computer Science & Engineering, IIT Madras (Nov, 2017)
- Named as one of the most high-performing employees in Ericsson (April, 2016)
- Won the ROCKSTAR Award in Ericsson (Nov, 2015)

Teaching Experience

- Teaching Assistant: CS2200 - Languages, Machines and Computations (Spring, 2019)
- Teaching Assistant: CS5800 - Advanced Data Structures and Algorithms (Fall, 2018)
- Project Assistant: Centre for Computational Brain Research (CCBR) (Spring, 2018)
- Teaching Assistant: CS1100 - Computational Engineering (Fall, 2017)