

# Debamitro Chakraborti

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## PROFESSIONAL EXPERIENCE

**Cadence Design Systems      Principal Software Engineer      August 2010 - Present**

- Xcelium  
This product simulates hardware by compiling gigabytes of high level source code. Even the most complex chips in the world use this product. It is best to describe this product as a compiler tool-chain for a complex high-level language which is only used to create massive codebases.
  - ♦ Optimized the runtime performance of the simulator by as much as 10x in various critical customer designs.
  - ♦ Improved the peak memory usage of the compiler by as much as 30%.
  - ♦ Wrote IR-based compiler optimizations including function inlining for the System Verilog language.
  - ♦ Implemented new scheduling semantics in the simulator.
  - ♦ Designed and developed various parts of the runtime library of the simulator.
  - ♦ Refactored legacy code in a 10MLOC codebase.
  - ♦ Started introducing modern C++ in the team and organized technical learning sessions.
  - ♦ Took initiative for improving the build system to make it faster by parallelization.

**Nusym Technology India Pvt Ltd      R&D Engineer      October 2008 - June 2010**

- Developed various parts of the interpreted simulator.

**Atrenta India Pvt Ltd      Senior Software Engineer      July 2005 - October 2008**

- Worked on the core engine of a static analysis tool.

## TECHNICAL SKILLS

- Extensive knowledge of C and C++
- Some experience with Clojure/ClojureScript, Javascript, PHP, Perl
- Technologies : Linux, Git, Coverity, Valgrind, gdb

## PUBLICATIONS

- 'PRIVDAM: privacy violation detection and monitoring using data mining' by Jaijit Bhat-tacharya, Rajanish Dass, Vishal Kapoor, Debamitro Chakraborti, S.K. Gupta. (Working paper, IIM Ahmedabad, 2005)

## SELECTED PROJECTS

- Implemented a set of new real-time data mining algorithms and benchmarked them on standard datasets. Language: C++/STL. Advisor: Prof Rajanish Dass, IIM Ahmedabad.
- Developed the Linux version of Indian Script Input System (<http://www.bangla.name/isis>), a program that enables users to phonetically type Indic scripts on both Windows and Linux. The typing system was invented by Prof Gautam Sengupta, University of Hyderabad. Language: C/C++. GUI: GTK for gnome, Xlib for X.
- Developed a MIDI file generator for programmatically generated music, and presented it at the Engineering and Technological Fair held at Birla Industrial and Technological Museum in February 2001. Language: C.
- Developed the GUI for a gsm network simulation project. Language: C++ with Qt.
- Wrote an evaluation engine for temporal logic formulae, as part of a project on Formal Verification of Security Protocols using Temporal Logic. Language: C++. Advisor: Prof Chandan Majumdar, CSE, Jadavpur University.

## EDUCATION AND AWARDS

- Recurse Center, New York City (Mini batch, August 2018)
- B.E. in Computer Science and Engineering (year: 2005) from Jadavpur University, Kolkata (percentage: 75)
- 5th rank in West Bengal Joint Entrance Examination (2001)
- Jagadis Bose National Science Talent Search scholar (batch of 2001)