

# Dibyendu Nath | Dev

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## OBJECTIVE

Looking for challenging full-time software engineering opportunities in the domains of *Distributed Systems, Cloud Computing* and *Large Scale Data-intensive Computing* involving *Big Data*.

## EDUCATION

**University of California, Santa Barbara** – Santa Barbara, CA Sep 2013 - Jun 2015 (expected)  
Master of Science, Computer Science GPA: 3.90 / 4.0

Advisors: Prof. Rich Wolski, Prof. Chandra Krintz

Courses: Cloud Computing, Advanced Distributed Systems, Advanced Operating Systems, Scalable Internet Services, Data Intensive Computing, Information Retrieval, Advanced Data Mining

**West Bengal University of Technology** – Kolkata, India Aug 2007 - Jul 2011  
Bachelor of Technology, Computer Science & Engineering GPA: 8.74 / 10.0

## EXPERIENCE

**University of California, Santa Barbara** Santa Barbara, CA  
Research Assistant, RACE Lab – StochSS : Cloud-based Stochastic Simulation as a Service Sep 2013 – Present  
Teaching Assistant – Data Structures & Algorithms, Foundations of CS, Python Programming Sep 2013 – Jun 2014

**AppFolio Inc.** Goleta, CA  
Software Engineering Intern – RentMatch : Appfolio's Pricing Analytics (Data Science) team Jun 2014 – Sep 2014

**McAfee Inc.** Bangalore, India  
Software Development Engineer – Endpoint Encryption for Files and Folders (EEFF) team Feb 2012 – Aug 2013

**Indian Statistical Institute** Kolkata, India  
Research Intern, CV & PR Unit – Query Expansion Improvement in Terrier Search Engine Jul 2010 – Jun 2011

## TECHNICAL SKILLS

**Programming:** Extensively coded in *C/C++, Java, Python, Ruby*. Proficient in *shell scripting, SQL, Scala, Go*.

**Web:** Rails, Django, JavaScript, HTML, CSS, JEE. **Operating Systems:** Linux, Windows.

**Tools & Platforms:** RabbitMQ, Celery, Eucalyptus, Hadoop, Apache Spark, memcached, Weka, NLTK, Stanford NLP, Amazon AWS, Google App Engine, MySQL.

## PROJECTS

**StochSS : Cloud-based Stochastic Simulation as a Service** – Research at RACE Lab Fall 2014 – present

- Building a generic cloud computing framework for configuring virtual machines and auto-deploying arbitrary scientific simulation programs in the cloud by wrapping the source code as a web service.
- Working on data management extension for analyzing and visualizing TB-scale generated simulation output.

**RentMatch : AppFolio's Pricing Analytics** – AppFolio Summer 2014

- Worked in AppFolio's Data Science team on finding *Rental Unit Similarity* using machine learning methods based on features like amenities, associated text, school districts, location, linked census data, etc.
- Designed and built **Super Squirrel**, a *MapReduce* like framework for collecting and processing data, distributed across AppFolio's data centers.

**EEFF : Endpoint Encryption for Files and Folders** – McAfee Feb 2012 – Aug 2013

- Worked on enterprise encryption product for Windows endpoints – contributed to client-side (including filter driver development) as well as server-side ePO management codebase.
- Developed '**Kill Pill**' Proof of Concept – remote deactivation and secure wiping of encrypted USB devices.
- Other features developed include **Key Cache Expiry**, code overhaul for **FIPS 140-2** encryption standard compliance, Role-Based Key Management, enhanced encrypted removable media recovery, etc.

**RamseyCoin : Cloud Infrastructure for BitCoin Mining** Spring 2014

- Designed and built a fault-tolerant, scalable P2P service for computing proof-of-work function for mining a fictitious bitcoin over disparate computing infrastructures like Amazon AWS, Azure, Condor, for feasibility demonstration.

**eFUSE : Encrypted File System in User Space** Fall 2013

- Built an encrypted file system in user space, based on the Unix File System using FUSE and OpenSSL libraries (AES encryption). Optimized read/writes by implementing LRU-based buffer and inode caching.

### StockMood : Sentiment Analysis of StockTwits

Winter 2013

- Developed a prediction model for Stock Market trends from sentiment analysis of **StockTwits**, a Twitter-like microblogging platform for stock market news, employing supervised machine learning methods.

### Trac.kr : A Scalable Web App for tracking goals

Fall 2013

- Developed a *Scalable Social Web Service* in *Rails*, that keeps track of goals that the user wants to achieve in areas like hobbies, socializing, family, health where your friends can offer suggestions, cheer you on or join a shared goal, etc.

### Query Expansion Improvement in Terrier IR Platform – Indian Statistical Institute

Jul 2010 – Jun 2011

- Optimized Query Expansion in *Terrier Information Retrieval Platform* by exploiting semantic relationships amongst words using **WordNet** in conjunction with **Local Context Analysis** techniques.

### DMS-OS : A 32-bit Operating System – B. Tech. Project

Aug 2010 – May 2011

- Built a rudimentary 32-bit operating system from scratch with multi-tasking support, modeled after the Linux Kernel. Coded kernel modules for device drivers for managing *Keyboard*, *Visual Displays*, *FAT12 File System*, etc.

### PUBLICATIONS

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D. Nath, S. Ray, S.K. Ghosh, "**Fingerprint Recognition System: Design & Implementation**", Proceedings of International Conference on Scientific Paradigm Shift In Information Technology & Management, SPSITM'11, January, 2011.

### AWARDS & HONORS

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- Ranked **585<sup>th</sup> (99.57 percentile)** out of about 130,000 students in *Computer Science*, in *Graduate Aptitude Test in Engineering, 2011* (Entrance exam for Indian Graduate School Admissions for IITs/NITs etc).
- Recipient of **National Merit Scholarship** for a top performance of **rank 49** in *State Secondary Examination, 2005* among about 700,000 students.
- Secured **9.27 SGPA (department highest)** in *5<sup>th</sup> Semester* of undergraduate coursework and ranked consistently in the **top 10%** of department (among 120 students).
- Secured a *world-wide* rank of **3985 (288<sup>th</sup> in India)** in *Google Code Jam 2010* and got through the Qualification Round.
- Ranked among **top 2%** in *State Engineering Entrance Examination, 2007*.
- Awarded **Chitroprobha Upadhi Certification** in 2003 after completing a **6-year course on Painting (Arts)** by *Bengal Music College, Kolkata, India*.