Dibyendu Nath | *Dev*

6520 El Colegio Road, Apt. # 2108, Santa Barbara, CA 93106. | *cell:* +1.805.637.2598
email: dnath@cs.ucsb.edu | *web:* `http://dnath.github.io` | *github:* `https://github.com/dnath`

Objective

Looking for challenging software engineering job 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. Chandra Krintz, Prof. Rich Wolski

Courses: Cloud Computing, Advanced Operating Systems, Advanced Distributed 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, RACELab — *Sep 2013 – Present*
– StochSS : Cloud-based Stochastic Simulation as a Service
Teaching Assistant, Dept. of Computer Science — *Sep 2013 – Jun 2014*
– Data Structures & Algorithms, Foundations of Computer Science, Python Programming

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

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

Indian Statistical Institute — Kolkata, India
Research Intern, Computer Vision and Pattern Recognition Unit — *Jul 2010 – Jun 2011*
– Query Expansion Improvement in Terrier IR Platform

Technical Skills

Programming: Extensively coded in ***C/C++, Java, Python, Ruby.*** Proficient in *shell scripting, SQL, Scala, Go.*
Tools & Platforms: Weka, NLTK, Stanford NLP, AWS, S3, RabbitMQ, Celery, Hadoop, Spark, AppEngine.
Web: Rails, Django, JavaScript, HTML, CSS, JEE. **Operating Systems:** Linux, Windows.

Projects

StochSS : Cloud-based Stochastic Simulation as a Service — *Fall 2014 – present*

– Building a generic cloud computing framework for configuring virtual machines and auto-deploying arbitary 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, 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.

RichCoin : Cloud-based 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 feasibilty 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.

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

– Worked on enterprise encryption product for Windows clients – 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.

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*

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

Fingerprint Recognition System *Winter 2010*

– Built a fingerprint recognition system using a minutiae-based approach where the relative positions of minutiae points isolated from fingerprints and were used to identify each unique fingerprint.

Publications

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

- Ranked **585th (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 5th Semester* of undergraduate coursework and ranked consistently in the **top 10%** of department (among 120 students).
- Secured a *world-wide* rank of **3985 (288th 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.*