

# Dibyendu “Dev” Nath

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## EDUCATION

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- University of California, Santa Barbara** – Santa Barbara, CA Sep 2013 – Jun 2015  
*Master of Science, Computer Science* GPA: 3.92 / 4.0  
Advisors: Prof. Chandra Krintz, Prof. Rich Wolski
- West Bengal University of Technology** – Kolkata, India Aug 2007 – Jul 2011  
*Bachelor of Technology, Computer Science & Engineering* GPA: 8.74 / 10.0

## EXPERIENCE

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- Google LLC** Mountain View, CA  
*Software Engineer* – Google Shopping Ads Serving Infrastructure Aug 2015 – Present
- University of California, Santa Barbara** Santa Barbara, CA  
*Research Assistant, RACE Lab* – StochSS : Cloud-based Stochastic Simulation as a Service Oct 2014 – Jun 2015  
*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

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**Programming:** Extensively coded in *C/C++*, *Java* & *Python*. Proficient in *shell scripting*, *SQL*, *Go*, *Ruby*.  
**Web:** Rails, Django, JavaScript, HTML, CSS, JEE. **Operating Systems:** Linux, Windows.  
**Machine Learning:** scikit-learn, TensorFlow, NLTK.  
**Tools & Platforms:** Hadoop, Spark, MapReduce/Flume, RabbitMQ, Celery, memcached, MySQL, Eucalyptus, Amazon Web Services, Google Cloud.

## SELECT PROJECTS

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- Google Shopping Ads Serving Infrastructure** – *Google LLC* Aug 2015 – present
- Member of the engineering team for Google Shopping ads serving infrastructure, involved in development of the serving stack and indexing pipeline for shopping ads.
  - Adding new features to scale existing serving systems & make them reliable and fault-tolerant; working on latency improvements and fixing critical bugs.
  - Building new infrastructure for for showing organic shopping related results for queries on google.com.
- StochSS : Cloud-based Stochastic Simulation as a Service** – *RACE Lab, UC Santa Barbara* Fall 2014 – Spring 2015
- Built 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.
  - Developed *Flex Cloud*, a lightweight cloud service abstraction layer for supporting simulation runs over different infrastructures (physical, virtual, as well as public or private clouds).
- RentMatch : AppFolio’s Pricing Analytics** – *AppFolio Inc.* 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 Inc.* 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.

### Chimera : Distributed Bank Ledger

Fall 2014

- Designed and built a fault-tolerant, distributed, consistent store for a bank ledger where transactions can be recorded in replicated logs using a modified version of Paxos protocol to achieve consensus.

### StockMood : Sentiment Analysis of StockTwits

Winter 2014

- 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.

## PUBLICATIONS

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Drawert, B., Hellander, A., Bales, B., Banerjee, D., Bellesia, G., Daigle Jr, B.J., Douglas, G., Gu, M., Gupta, A., Hellander, S., Horuk, C., Nath, D., et al 2016. “**Stochastic Simulation Service: Bridging the Gap between the Computational Expert and the Biologist.**” PLOS Computational Biology, 12(12), p.e1005220.

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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- Awarded multiple **peer bonuses & spot bonuses** as a *Google software engineer* for going beyond the call of duty and completing critical project launches.
- Ranked **585<sup>th</sup> (99.57 percentile)** out of about 130,000 students in *Computer Science*, in *Graduate Aptitude Test in Engineering, 2011* (Indian Graduate School Admission Exam for IITs/NITs etc).
- Recipient of **National Merit Scholarship** for securing **rank 49** in *State Secondary Examination, 2005* among about 700,000 students.
- Ranked among **top 2%** in *State Engineering Entrance Examination, 2007*.
- Awarded **Chitroprobha Upadhi Certification** in 2003 after completing a **6 year course on painting** by *Bengal Music College, Kolkata, India*.