

Navneet Potti

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Research Interests

Large-scale data management, approximate query processing, adaptive processing, database security

Education

2013 **PhD in Computer Science**,
(onwards) *University of Wisconsin - Madison*, Wisconsin.
Specialization: Data Management

2005-2010 **BTech & MTech in Electrical Engineering**,
Indian Institute of Technology - Madras, Chennai, India.
Specialization: Communication Systems (Network Coding)
Minor: Mathematics for Computer Science

Research Projects

2015 **Large-Scale Data Management.**, *UW-Madison*.
(onwards)

- Research Assistant under supervision of *Prof. Jignesh Patel*
- Currently working on problems in large-scale data management, including adaptive indexing, access control, fault tolerance, database partitioning and replication, etc.

Jun-Aug 2014 **SQL Processing in Distributed Databases**, *IBM Almaden Research Center*, San Jose, USA.

- Research Intern with the Big Data Integration team, managed by *Dr. Fatma Ozcan*.
- Explored various problems in SQL processing in the Hadoop and warehouse environments.
- Patent applications and paper submissions in progress.

2013-2014 **Deterministic Approximate Query Processing**, *UW-Madison*.

- Research Assistant under supervision of *Prof. Jignesh Patel*
- Introduced a **deterministic approach to approximate query processing**, along with a theoretical formalization and principles for designing DAQ schemes.
- Showed that a prototype DAQ scheme achieves **significant speedups** for some types of aggregations. Published at VLDB 2015.

2009-2010 **Network Coding for Non-Multicast Networks**, *IIT-Madras*.

- Master's Thesis under supervision of *Dr. Andrew Thangaraj*
- Developed some new **graph theoretic tools** for use in the analysis of **bandwidth-maximization** in non-multicast problems (an NP-hard problem).
- Devised and proved correctness of an algorithm to check the existence and find a solution in sub-class of this problem.

Publications

- VLDB 2015 DAQ: A New Paradigm for Approximate Query Processing.
Navneet Potti, Jignesh Patel. *International Conference on Very Large Databases (VLDB) 2015*
- SOC 2014 Online Replica Placement in Cloud Environments.
Poster Avriela Floratou, **Navneet Potti**, Jignesh Patel. *ACM Symposium on Cloud Computing, 2014 (Poster)*

Professional Experience

2010-2013 **Core Operations Strat**, *Goldman Sachs*, Bangalore, India.

- Used machine learning, math and computer science to improve efficiency, risk management and client service in the Operations division of GS.
- Responsible for designing, developing and maintaining core infrastructure used by the team and the rest of the Operations division.
 - Led the team responsible for building a division-wide data warehouse, incorporating terabytes of data from hundreds of disparate systems. Setting up two new teams for maintenance and governance of the data warehouse.
 - Designed the governance infrastructure for the data warehouse, coordinating with about ten different cross-divisional teams, with several thousands of users (expected) in the division.
 - Built a sophisticated metadata model, in order to centralize, validate, standardize and reuse business logic.
 - Combined the model with an advanced self-service reporting engine capable of translating complex business questions from lay users into optimized SQL queries, with sanity checks against common misinterpretations.
- Worked with various senior managers in Operations to better define their business problems and built quantitative/statistical models to solve them: including risk models used for workflow prioritization and anomaly detection, particularly in the collateral management function.
- Helped define a standard model evaluation and delivery service, with governance around model building and validation, and integration with the rest of the risk reporting ecosystem in Operations.

Scholastic Achievements

- Selected for the International Chemistry Olympiad Training camp in Mumbai in 2005 (among top 50 nation-wide).
- Selected for the National Mathematics Olympiad both in 2004 and 2005.
- Selected for the IISc – Microsoft Research India Summer School on Networking in 2009.
- Secured rank 1100 out of about 200,000 candidates in the IIT Joint Entrance Exam.
- Secured rank 16 and 37 in Kerala state in the All India Engineering Entrance Exam and Kerala Common Entrance Test.
- Recipient of the CBSE Merit Scholarship.