

Divyam Bansal

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Interests

Databases, Data Mining, Distributed Systems

Education

May 2015 **Bachelor of Technology**, Computer Science and Engineering
Indian Institute of Technology Bombay
Honors in Computer Science
Minor in Applied Statistics & Informatics
Advisor: S. Sudarshan
GPA: 8.92/10.0

Publications

Manoj K Agarwal, **Divyam Bansal**, Mridul Garg, Krithi Ramamritham, *Keyword Search on microblog Data Streams: Finding Contextual Messages in Real Time*.
Extending Database Technology - 19th International Conference (EDBT 2016)

Industrial Experience

- June 2016 - **Google**, London, UK
Present Software Engineer | Google Ads team
- Implemented logic to detect & disable malicious AdSense publishers to stop spam activities
 - Maintain crucial logic which calculates earnings worth millions of dollars for publishers
- July 2015 - **Google**, Bangalore, India
June 2016 Software Engineer | Google Maps team
- Involved in the development of the mapmaker tool which allows user to edit Google maps
 - Developed algorithm to continuously sync the data from server with ongoing user changes
- Summer 2014 **Deutsche Bank**, Mumbai, India
Intern | Quantitative Analysis of Equity trades at Exchanges
- Analyzed variations in the price procurement of equity trades across Dark Pools & Lit exchanges in US markets
 - Devised a robust metric using statistical methods to measure performance of different trading algorithms, enhancing the firm's ability to quantify algorithmic improvements

Research Experience

- 2014 - 2015 **Bachelor's Thesis**, Incremental Query Optimization | Guide: Prof. S. Sudarshan
- Worked on adaptive query optimization techniques that can automatically re-plan queries
 - Developed an incremental search algorithm, that efficiently prunes the exponential search space of equivalent queries using PyroJ, a top-down Query Optimizer
- 2014 - 2015 **R&D Project**, Keyword Search on microblog data stream | Guide: Prof. Krithi
- Developed search engine to return most relevant events' summary in real time for keyword search on dynamic microblog data stream; resulting event and summary evolves with time
 - Used temporal and spatial relation among the data to build the emergent event graph

Honors and Awards

- Achieved All India Rank 31 in IIT-JEE 2011, among half a million candidates
- Awarded Gold medal in Indian National Chemistry Olympiad 2011
- Awarded the prestigious KVPY Scholarship (2010-11), instituted by the Department of Science and Technology, Government of India
- Awarded Merit Certificates for being among the top 1% (top 300) in the Indian National Physics Olympiad and the Indian National Astronomy Olympiad 2011
- Awarded Merit Certificate for Science by CBSE India in 2011; among top 0.1% students
- Secured International Rank 6 in International Mathematics Olympiad 2010, held by SOF

Projects

- Fall 2014 **Texture Synthesis by Non-parametric Sampling**
Modelled texture as a Markov Random Field where the texture synthesis process grows a new image outward from an initial seed, one pixel at a time
- Fall 2014 **Cost Metric in Query Optimization**
Worked on improving the efficiency of the cost metric in the PyroJ query optimizer. Enhanced query processing using the Statistics Collector toolbox of PostgreSQL
- Spring 2014 **Byte-stream File System with Disk Cache**
Developed file system having its own data block allocation scheme, disk cache and permission control with multi-user support and concurrent access for an OS built on top of Linux
- Spring 2014 **Depth Estimation from a Single Still Monocular Image**
Applied Supervised Learning to predict the depth-map as a function of the image using monocular cues like texture variations, texture gradients and haze
- Fall 2013 **Decoding Captcha**
Developed a Neural Network using multilayer perceptron model for Optical Character Recognition to decode Captcha into plain text with 85% accuracy

Leadership Positions

- 2013 – 2014 **Media & Marketing Manager, Techfest 2014, IIT Bombay**
Core team member of Asia's largest Science & Technology festival. Led a two-tier team of 120 members procuring sponsorships worth 300K USD & media presence worth 430K USD
- 2013 – 2014 **Mentor, Department Academic Mentorship Program, IIT Bombay**
Mentored a group of 10 sophomores, focusing on their academic and general development
Assisted students who were part of the Academic Rehabilitation Program
- 2014 – 2015 **Teaching Assistant, IIT Bombay**
Teaching Assistant for Digital Logic and Design Undergraduate CS course

References

Prof. S. Sudarshan
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Prof. Krithi Ramamritham
IIT Bombay
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