

Anshuman Biswas

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About

Anshuman is a Ph.D. candidate at Carleton University, working in the area of cloud middleware performance aided with machine learning. His interests lie in designing applications across any combination of public and private clouds with the ability to optimally consume cloud resources based on cost, capacity and capability. His work focuses on finding techniques for automatically scaling of cloud resources in a deadline driven environment. Other than utilizing the existing threshold based techniques, Anshuman tries to find new trigger points in the system that act as better indicators. He also uses machine learning techniques to predict future traffic patterns.

Education

PHD | ELECTRICAL AND COMPUTER ENGINEERING | (CURRENT) | CARLETON UNIVERSITY | 3.9/4.0

M.A.SC. | ELECTRICAL AND COMPUTER ENGINEERING | 2013 | CARLETON UNIVERSITY | 3.8/4.0

Previous Education in India

M.SC. | COMPUTER SCIENCE | 2009 | CALCUTTA UNIVERSITY | 79.83% [5TH RANK IN UNIVERSITY]

B. SC. | COMPUTER SCIENCE | 2007 | CALCUTTA UNIVERSITY (ST. XAVIER'S COLLEGE) | 68.12% [2ND RANK IN COLLEGE, 9TH IN UNIVERSITY]

Experience

CHIEF TECHNOLOGY OFFICER | NEAREST INC. | JUL 2012 – PRESENT | OTTAWA, CA

- Creating a hyper-local search experience. Built a real-time framework for commutation and search.
- Supported by Startup Canada and Invest Ottawa.
- Used *Meteor.js*, *Sphinx*, *Web-Sockets* and *WebRTC*.
- Application deployed on a cloud environment with proactive auto-scaling.
- Used *Amazon Web Services* (EC2 + RDS) for production and *Digital Ocean* for development.
- Dev-ops oriented deployment with *Vagrant*, *Puppet* and *Chef* to ensure consistency. *Jenkins* for integration management.
- Managed a team of 8 to meet weekly project deadlines.
- Used *JIRA*, *Confluence*, *Gliph*y and *HipChat* for team management.

Nearest relies heavily on *MySQL* (*InnoDB* and *MySQL Cluster*) for persistency and fast processing (*MySQL Cluster*). For searching through over 100 million entries, the search engine uses *Sphinx* as an index. The application communicates with the server in real-time using *Web-Sockets* (*PHP* backend). *PHP* and *JavaScript* make heavy use of handlebars to cache templates and send only data “on the wire”. A propriety data distribution protocol has been built for clients to exchange information in real-time (10ms – 100ms delays). Clients can go completely “offline” from the server and work in a p2p setup using *WebRTC*.

SYSTEMS ENGINEER | TATA CONSULTANCY SERVICES LTD. (TCS) | SEP 2009 – JAN 2012 | KOLKATA, IN

- Worked with different data warehousing solutions with SAP. Responsible for creating data models and reports.

DEVELOPER | GLOBAL TRAVEL SOLUTIONS | AUG 2009 – SEP 2009 | MUMBAI, IN

- Worked in the aviation industry to build an integrated travel portal using Google Web Toolkit.

INTERN | 2PIRAD | SEP 2007 – APR 2008 | KOLKATA, IN

- Built a data communication channel using an optical device and a rudimentary OSI layer.

Skills

- **Languages** - C C++ Java PHP JavaScript
- **Databases** - MySQL MsSQL Oracle MongoDB

- **Frameworks/APIs/Libraries** - Hadoop Spring Node.js Meteor.js jQuery
- **Cloud Providers** – OpenStack Amazon-AWS Digital Ocean Rackspace Azure
- **BUILD/CI** – Gradle Jenkins
- **Servers** – Apache Nginx Tomcat
- **Search** – Sphinx Lucene ElasticSearch
- **Dev-Ops** – Vagrant Puppet Chef
- **CMS** – Joomla Drupal Wordpress
- **Version Control** – GIT SVN
- **Team Management** – JIRA Confluence Glyphy

Research Papers

"Automatic Resource Provisioning: a Machine Learning based Proactive approach," IEEE, CloudCom, 2014, Singapore

"A Framework for Automatic Resource Provisioning for Private Clouds", IEEE, C4BIE 2013, Delft.

"A lightweight defense against the Packet in Packet Attack in Wireless networks," IEEE, Wireless Days Conference 2012, Dublin

"Performance Evaluation of AODV and DSR Routing MANET Protocols", Springer, ADCONS, 2011, Surathkal

Personal

- Languages – English, Hindi, Bengali
- Interpersonal Skills - Strong ability to communicate with clients, fellow employees, and different levels of management.
- Associations: CISA (Carleton Indian Student's Association, NETIP (Network of Indian Professionals)
- TA Experience (In Carleton University) –
 - SYSC2004 (Jan–Apr 2012)–"Object Oriented Programming and Design"
 - ECOR2606 (May-Jun 2012/2013/2014)–"Numerical Methods"
 - SYSC4102 (Jan–Apr 2013)–"Performance Engineering"
 - SYSC4001 (Sep–Dec 2013/2014)–"Operating Systems"