

## EDUCATION

### Master's in Computer Science

Expected 2012

GPA 4.0, Stony Brook University

**Courses** Algorithms, Natural Language Processing, Computational Biology, Words and Pictures, Concurrent and Distributed Algorithms

### Bachelor of Engineering (Computers)

Jun 2006

First Class, Vidyavardhini College of Engineering and Technology

**Courses** Artificial Intelligence, Advanced Databases, Operating Systems, Computer Networks

## SKILLS

### Languages

- proficient in C#, Python, Java, Javascript, Bash
- working experience with C++, Ruby

### Data

- classification and mining with Weka, numpy, NLTK, learning R
- data mining on Microsoft Analysis Services with MDX/DMX, SQL

### Frameworks

- OR Mapping frameworks (NHibernate, Microsoft Entity Framework, Gentle.Net)
- Web frameworks (Google AppEngine, ASP.Net, Django, Google AJAX API, jQuery)

## PROJECTS

### Vandalism detection in Wikipedia

**Stony Brook University**

We proposed a novel approach to detecting vandalism, modelling edits and vandal edits using a probabilistic context free grammar, and used the model to evaluate new edits. We attained 84% precision and 89% recall.

### Pattern recognition in human speech

**Stony Brook University**

I built a classifier to detect the language of a human speaker, by building an ngram model over various co-efficients of an audio signal. The classifier attained an accuracy of 72% and recall of 73%, when tested over 9 languages. I am currently working in the Algorithms Lab, under the guidance of Prof. Steven Skiena, to improve the performance of the classifier.

### Language detector for textual data

**Stony Brook University**

Implemented a novel algorithm, under the guidance of Yuri Puzis, to detect the language of a given piece of text using a trie based decision tree. The accuracy of the classification could be increased to an arbitrary level (limited by a dictionary) while training the decision tree.

### Social network based on recommendation

**Self and friends**

Given things you like and don't, one can predict who is similar to you. We built this recommendation based social network on the Google AppEngine, using Django.

### MDX query optimizer

**Neorithm Technologies**

Given a high level declarative user query in XML, I developed a translator to transform the user query into an optimized MDX query for a Microsoft Analysis Services OLAP warehouse.

### Versioned document management datastore

**Neorithm Technologies**

I developed a datastore to store files, and exposed an API in C#. The datastore had versioning support, and supported multiple implementations for actual storage of files. In particular, a filesystem based, and a relational database backends were built.

### ATM switch

**Finacus Technologies**

Built a daemon to run on ATMs, and carry out transactions with banks using the Diebold and NCR protocols. The daemon was written using the Microsoft.Net framework and was extensible to support other protocols.

### Web application development framework

**Finacus Technologies**

Built a web application development framework, consisting of UI elements (ASP.net controls), an ORM, workflows and code generators. These greatly reduced the development time and provided independence from 3rd party vendors.

### **Rater extensions**

**Amdocs**

Developed various daemons and C++ extensions to support the telecom billing processes of Amdocs' *Rater* product, on Sun Sparc and AIX systems. I travelled to Israel and Russia to test and production support of the product.

### **The Distributed DataBase**

**Vidyavardhini College of Engineering**

Developed the parser, query execution engine and GUI for The Distributed DataBase (TDDB), a true distributed database built from the ground up, which conforms to the SQL-92 syntax

### **Email Server**

**Vidyavardhini College of Engineering**

Built an email server in JSP/servlets, where the communication between the server and client was done through web services.

### **Wordlist trainer**

**Self**

Built a website to help students prep for wordlists for exams like the GRE. It uses an AJAX interface, and a unique approach to learning - *revise that which you did not know the last time*, taking out the complexity to manually mark "hard" words.

### **Various jQuery plugins**

**Self**

Built various jQuery plugins during the course of my employment in Neorithm Technologies, while improving usability in web applications. Some of them can be seen in online repositories linked at the end of this resume.

## **CAREER**

### **Technical Leader**

**Neorithm Technologies, Oct 2008 - July 2010**

- core team member since inception, I **led the technology R&D** across the company's product lines
- built a rule engine to filter 'interesting' transactions in a bank, which led to an **anti money laundering** product currently deployed in a bank
- developed a **business intelligence** product, where a financial institutions' relational data is imported into a SSAS cube, and analyzed in a pivot table built in Flex
- developed a C# API to emulate a **versioned filesystem**, with pluggable storage support; in particular, a file-system and a relational database back-ends are ready
- oversaw the development of a **loan origination system**, where potential customers were identified and clustered based on various financial, demographic and personal parameters

### **Senior Software Engineer**

**Finacus Solutions, Nov 2007 - Aug 2008**

- developed an **enterprise application development framework**, consisting of workflows, an ORM framework, message queues; and code generators for an ASP.Net based UI
- assisted in the development of an **ATM switch**, supporting the Diebold and NCR protocols
- played a major role in improving the **usability** of web applications, using JavaScript to bring desktop-like features to web applications

### **Subject Matter Expert**

**Amdocs Development Center (India), Aug 2006 - Oct 2007**

- worked on extending the functionality of Amdocs' '**Rater**' product for two successive versions, writing **shell scripts and C++ daemons** on Unix (Sun and AIX) systems
- traveled to Israel for testing, and to Russia for production support of 'Rater' deployment

## **EXTRACURRICULAR ACTIVITIES**

- won many programming contests in the Mumbai University campus during engineering studies
- listen to Hans Zimmer, ColdPlay, Amanda Palmer; read P.G. Wodehouse, John Grisham; play cricket

## **LINKS**

- Code samples: <http://github.com/sandesh247>; <http://code.google.com/u/sandesh247>
- Blog: <http://sandesh247.com/journal>