

Degree	Institution	Year	Performance
Integrated MSc.- Mathematics and Computing	IIT Kharagpur	2011-2016	7.84/10
Class XII, CBSE	Maharaja Sawai Man Singh Vidyalaya	2011	90%
Class X, CBSE	Maharaja Sawai Man Singh Vidyalaya	2009	92%

### WORK EXPERIENCE

**Full Stack Developer, Intern** **Dreamworks Dedicated Unit, Bangalore** **May-July, 2015**

- Designed and implemented a **JSON/HTTP API** to allow access to an internal database of an AngularJS/Python WebApp
- Designed and coded Angular **directives** for live editing of only specific fields in a form for an **admin panel** of an AngularJS WebApp.
- Searched for code repetition throughout the AngularJS app and **extracted generic components** to Angular directives
- Discovered and fixed bugs caused by broken logic to set expiry time of **REDIS** cache keys. (tools - ssh, bash, pdb, git)
- Led a team of two interns to design and develop from scratch an **AngularJS app** for sending scheduled emails

**Research Assistant, Intern** **Brigham Young University, USA** **May-July, 2014**

- PVMapper, PVDesktop – Worked on Web based mapping tool based on **OpenLayers** Mapping Framework and **ExtJS** MVC frontend
- Implemented features for showing **real time updates** on a web front end from long running **server side processing** jobs
- Coded new **mapping features** in OpenLayers Mapping Framework and integrated them with ExtJS App and Visual C# Server.
- Proposed and implemented an **Object Oriented design** to a Visual C# app which allowed using a same class in different contexts
- Added new **UX features** to a Model-View-Controller architecture based web application in Visual C#, ExtJS

**Software Developer, Intern** **Universiti Malaysia Sarawak** **June-July, 2013**

- Worked on a Faculty Workload Evaluation and Analysis Web App written in **PHP, MySQL, jQuery**
- **Proposed** and **redesigned** a web interface in **Twitter Bootstrap** for a simpler and cleaner user interface
- Added interactive **graphic plots** to **analyze** and **visualize** patterns in faculty data; used **Google Chart API** and Twitter Bootstrap
- Developed **user authentication system** and an **admin panel** for a database server written in PHP/MySQL
- Implemented **Object Oriented Design** in the server code to ease parameters editing and extensibility for the site administrator

### PROJECTS

<b>Distributed Computing Library</b> (Self, 2015-present)	- <b>Authored</b> a <b>Multi-OS, Redis</b> based <b>distributed computing</b> library in <b>Go</b> (github.com/rohanraja9/jobworker) - Ensured ease to add new node to the cluster by simply <b>downloading</b> and <b>executing a binary file</b> for the OS - Designed a system for efficient job <b>distribution</b> and <b>monitoring</b> using built in <b>concurrency features</b> of <b>Go</b> - Tested on a <b>web crawler</b> on 13 million pages with <b>14</b> nodes; Observed almost linear scaling efficiency ( <b>10x</b> )
<b>Deep Learning Web Tool</b> (MSc. Project under Prof. Sudeshna Sarkar, 2015-)	- <b>Authored</b> a web based tool in <b>Python/AngularJS</b> to assist in experimentation of <b>Deep Learning Models</b> - Introduced " <b>Model Forking</b> " for parallel experimentation of small changes in parameter configuration - Trained a <b>Recurrent Neural Network</b> language model and tested more than <b>100</b> parameter configurations - Designed and implemented a system to manage parallel training and evaluation on a <b>24 core processor</b> - Supports <b>Theano, Keras, Scikit-Learn, C++</b> models; Coded a <b>generic</b> backend designed for easy extensibility
<b>Tweets Classifier</b> (NLP Class Project, 2015-present)	- Received <b>2<sup>nd</sup> Prize</b> in <b>Natural Language Processing</b> semester project competition sponsored by <b>Flipkart.com</b> - Trained a <b>statistical model</b> to <b>classify</b> tweets during a natural disaster based on of the degree of importance - Experimented with <b>Google Word2Vec</b> as word embeddings on a <b>Recurrent Neural Network</b> based model
<b>Torn Document Mosaic</b> (Opensoft, 2014)	- Proposed and implemented an algorithm in <b>C++/OpenCV</b> for <b>mosaicking images</b> of torn pieces of document - Algorithm based on searching for <b>similar edges</b> of torn pieces by <b>overlaying</b> them on each other - Implemented an <b>Object Oriented Codebase</b> for efficient <b>distribution</b> of coding job among team members
<b>Algomuse.com</b> (Self, 2013-present)	- <b>Author</b> of the <b>technology blog</b> ; Designed and developed the blogging engine in <b>Ruby on Rails</b> - Blog features <b>tutorials</b> and <b>articles</b> on technologies like Python, C++, Ruby on Rails, Raspberry Pi - Implemented a <b>search engine</b> to search <b>code snippets</b> throughout the blog

### ACHIEVEMENTS AND LEADERSHIP EXPERIENCE

- **Gold Medal, Inter-IIT OpenSoft, 2015:** Part of IIT Kharagpur's team to develop an **Android App** for serving multimedia content intelligently to rural areas with poor Internet availability; My role - **autonomously** create a local wifi network of all nearby phones
- **Winner** in **Microsoft "Code Fun Do"**, 2012 for developing a **Windows Mobile App** for geo location based alarm for railway passengers by **autonomous information retrieval** from Indian railway website and displaying alerts on the Windows Phone UI
- Student Volunteer at the **International Environmental Modeling and Software Society Conference**, 2014 at San Diego, California
- **First** among 32 teams at Fresher's Manually Guided Robot Soccer Competition, 2011 organized by **Robotix**, IIT Kharagpur
- **Captain** of Patel hall's **OpenSoft** team, **2015** and **2016** for the annual software development competition at IIT Kharagpur
- **Captain** for 2015 session of **Eastern Groups** of Patel Hall of Residence. Served as a **Keyboardist** and **Guitarist** for the hall band

### LANGUAGES AND TECHNOLOGIES

- **Programming Environment:** Linux/OSX, Bash, Tmux (customized), Vim (advanced)
- **Languages:** C/C++ (proficient), Python (advanced), Ruby (intermediate), Go (intermediate)
- **Web and Mobile:** Java (Android), Ruby on Rails, Python-Tornado, AngularJS, MongoDB, Go, PHP
- **Data Science:** Scikit-learn, Numpy, Theano, R