



## EDUCATION

PROGRAM	INSTITUTION	% / CGPA	COMPLETION
Dual Degree in Computer Science and Engineering	Indian Institute of Technology, Kharagpur	5.98	2016
Intermediate, Board of Intermediate Education, A.P.	Vijaya Ratna Junior College, Hyderabad	91.8	2010
SSC (10 th class), Board of Secondary Education, A.P.	Sri Gurudatta High School, Hyderabad	86	2008

## INTERNSHIPS AND PROFESSIONAL EXPERIENCE

**Function Space, Bangalore** May - July 2015

*Summer Intern*

- Data science project on determining the **best algorithm** for **predicting Customer Credit Risk**.
- Built **Classification models** using **Naive Bayes**, **Support Vector Machine** and **Classification and Regression Trees**
- Web development work in building a graphics tool, **Splash**, which is used for **creating animations** on **HTML5**

**IBM, Pune** May - June 2014

*Global Remote Mentoring Program*

**Title : Investigation of IPSec configuration requirements and performance impact for a iSCSI Storage Interconnect**

- Installed and **configured** a working **iSCSI storage interconnect** using Open Source tools
- Analyzed and **optimized** the **Interconnects performance** when using **secure** and **unsecure protocols** under a certain payload
- wrote a **White paper** describing the mechanism to **configure IPSec for iSCSI connections** and the corresponding performance analysis

**DRDO Sponsored Project, IIT Kharagpur** May - July 2013

*Summer Intern*

**Title : Model Building Attacks on Physically Unclonable Functions(PUFs) with Binary Decision Diagrams**

- Built **attack models**, using **Genetic Algorithms**, for partial **Challenge Response** pairs of **PUFs**
- Improved on previous results of a similar project by representing **large boolean expressions** as **BDDs**
- Devised a **novel method** to find **percentage of similarity** between **two large Boolean expressions** using **BDDs**

**Polaris Financial Limited, Hyderabad** May - June 2012

*Summer Intern*

- Built and designed the **UI** for a **Mobile Insurance application**
- Used **Sencha Touch** and **ExtJS** for designing the Front end of the application

## PUBLICATIONS

**Hardware-Oriented Security and Trust (HOST), 2013 IEEE International Symposium on** 2-3 June 2013

**Title: Model building attacks on Physically Unclonable Functions using genetic programming**

- Developed a highly accurate attack model on **8 bit RO-PUFs** and **63-bit Arbiter PUFs** using **Genetic Algorithms** such as **Crossover**, **Elitist Model**, **Tournament Model** and **Mutation**
- Attended the conference on University travel grant in **Austin, TX**. Presented the results there

## PROJECTS AND RESEARCH EXPERIENCE

**Bachelor Thesis Project-II** January - April 2015

*Prof. Rajat Subhra Chakraborty*

**Title: Graphical User Interface for NIST's Random Number Generator Test Suite**

- Constructed a user friendly Frontend for NIST's Random Generator Test Suite
- Involved modifying several modules of existing code. Used **Java Swing** to build the GUI

**Bachelor Thesis Project-I** August - November 2014

*Prof. Rajat Subhra Chakraborty*

**Title: Detection of Key leaking Hardware Trojans using Gate Level Information Flow Tracking**

- Gen points/ rape points depending on your type
- Devised a mechanism for detecting **Hardware Trojans** in third party Intellectual Property (**3PIP**) Cores. An **Information flow tracking approach** at the **granularity of gate level** has been used which directly or indirectly **detects the flow of secret information** over the whole circuit
- Explored the **Gate Level Characterization** approach for detecting more diverse classes of Hardware Trojans

Information Retrieval

Title:Travel based FAQ android app using IBM Watson

- Built a Travel based FAQ app with supervised learning supported by IBM Watson Experience Manager
- Made use of IBM Bluemix services to connect the frontend to the database containing the Corpus data consisting of pages from Wiki Travel(wikitravel.org) with the question and answer set provided manually
- Simple and easy to use Interface with good accuracy levels

Natural Language Processing

Title:Native Language Identification tool to determine the native language of a writer from their English writing

- Implemented several algorithms and heuristics in order to identify the semantic and syntactic patterns which are used to determine the language of a writer
- Used Support Vector Machines and Nave Bayes Classifier as the Supervised learning approaches for training data
- Achieved a mean accuracy of 65 percent level, in identifying complex languages such as Mandarin, Catalan, Czech etc.

Database Management Systems

Title:Songuesse , a Music Recommender and Database System

- Made use of the BASS library to calculate the 8192 point spectrum by performing a FFT over samples obtained from an mp3 file
- Mel Frequency Cepstral Coefficients (MFCC) are obtained for the spectrum.The obtained MFCCs are then used to recommend different songs based on a Chi-squared distance method

Mobile Processors

Title:Attacking model for generating Alphanumeric Shellcode for ARM architecture

- Built Alphanumeric Shellcode for ARM processors that bypass the filter that blocks data containing non alphanumeric characters
- Constructing an attack model for automated generation of alphanumeric shellcode for ARM architecture
- Made use of QEMU and gcc-arm-linux-gnueabi package for ARM emulation on an x86 machine

TECHNICAL SKILLS

● Languages - C, C++, Java, Verilog, R, Assembly(ARM and MIPS). Database - MySQL. Script - Python, Shell,Tcl. Web and Mobile development - Nodejs, Expressjs, Extjs, Sencha Touch, Mongoddb, Bootstrap. Tools - Eclipse, L<sup>A</sup>T<sub>E</sub>X, Netbeans, graphviz, GLib, Qt, Qemu, scikit-learn, NLTK, Android Studio

SCHOLASTIC ACHIEVEMENTS

- Attended National Camp for students who have made it to the penultimate round of Physics and Astronomy Olympiad, held at IIT Bombay, 2008. (Among Top 30 out of approximately 35,000 candidates)
- Secured rank 6 in the Maths Olympiad conducted by AP association of Maths Teachers, 2008 (APAMT)
- Secured rank 13 in the Regional Maths Olympiad, Andhra Pradesh (Telangana region)

POSITIONS OF RESPONSIBILITY

Governor, Quiz Club, 2014-15	<ul style="list-style-type: none"><li>● One of the three members responsible for organizing and co-ordinating quiz events in IIT Kharagpur</li><li>● Represented the Institute in several National and Inter-collegiate quiz competitions</li></ul>
Captain, Quiz team, RK Hall	<ul style="list-style-type: none"><li>● Led the team to three podium finishes, after several years</li></ul>

EXTRA-CURRICULAR ACTIVITIES

Football	<ul style="list-style-type: none"><li>● Part of the National Sports Organisation,2010-2012</li><li>● Won a bronze in Inter-halls</li></ul>
Quiz	<ul style="list-style-type: none"><li>● Won 2 silvers and a bronze in Inter-halls</li><li>● Won several prizes in quiz competitions</li></ul>
Writing	<ul style="list-style-type: none"><li>● Writer for Sportskeeda, a sports blog</li></ul>