Sagun Pai

Personal Data

Address:	Room 325, Hostel 9, IIT Bombay, Powai, Mumbai, 400076
Date Of Birth:	20 December 1994
Nationality:	Indian
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Education

Current — Indian Institute of Technology Bombay, Mumbai
Bachelor of Technology in Electrical Engineering
Minor in Computer Science and Engineering
CGPA: **3.248/4**

May 2012 — Sathaye College, Mumbai
Intermediate Examination in Science
Percentage: **87.17**%

May 2010 — Shri M. B. High School, Mumbai
Matriculation Examination
Percentage: **96.91**%

Academic Achievements

- Secured **All India Rank 189 in IIT-JEE** 2012 among 0.5 million candidates (**top 0.04%**)
- Secured **All India Rank 616 in AIEEE** 2012 among 1 million candidates (**top 0.06%**)
- Recipient of the **Charpak Research Internship Scholarship**, awarded by the French Embassy in India to around **35 students** all throughout India
- **First** in Maths Talent Search Examination 2008 conducted by Indian Institute for studies in Mathematics (**IISMA**)
- Qualified for Indian National Mathematics Olympiad (**INMO**) 2012 and Indian National Chemistry Olympiad (**INChO**) 2012 (**top 300 among 30,000 candidates**)
- Recipient of National Talent Search Examination (NTSE) Scholarship (2009), awarded by National Council of Educational Research Training to the **top 1000** students in India
- Among national **top 1%** in the National Standard Examination in Chemistry (NSEC) 2011, state **top 1%** in the National Standard Examination of Physics (NSEP) 2011 and state **top 1%** in the National Standard Examination of Astronomy (NSEA) 2011
- Received **Silver** Medal in Homi Bhabha Young Scientist Contest 2006 and 2009 conducted by Greater Bombay Science Teacher's Association
- Recipient of Maharashtra State High School Scholarship 2007, awarded by the Maharashtra State Council of Examinations

INTERNSHIPS & PROJECTS

MAY 2015-JULY 2015

CitiCorp Services India
Intern, RATES AQUA Team, CTC Pune

Migrated existing time consuming SQL based Product Stress Test procedures to faster **Apache Hadoop** big data framework, within the given space constraints

Researched on various technologies to efficiently execute multiple stress case computations and report Hadoop data via **Qlikview** and **OLAP** cubes

Achieved an overall **90 percent** time reduction over the older implementation

DECEMBER 2014

Deloitte Touche Tohmatsu India
Intern, Enterprise Risk Services Department

Read literature from top finance journals and suggested a new, efficient technique to model **Credit Default Swaps** based of a dynamic set of market parameters such as interest rates, swap prices, default spreads, etc

Implemented the model in **C++** using standard financial libraries such as **boost** and evaluated the results with the existing Excel based methods to achieve a better model

MAY 2014-JULY 2014

Research Institute of Computer Science of Toulouse (IRIT)
Prof Josiane Mothe, Adrian Chifu (Paul Sabatier University)

Examined query log sessions and derived query patterns from them, eventually storing the entire data in the form of a graph database using **Neo4j & Python (py2neo)**

Extracted **co-occurrence matrix** from a large collection of texts (consisting **1.6 million unique terms**) and to calculate various query features from the matrix

Suggested and applied a novel method to execute query expansions by using the concepts of Node **centrality and distance measures** on the graph form of the co-occurrence matrix

The findings are being converted into a **research paper**, to be published soon enough

DECEMBER 2014-PRESENT

Prediction of Stock Price Fluctuation
Prof. Ondrej Bojar, Katerina Veselovska (Charles University Prague)

Implementing **sentiment analysis techniques** on news articles in order to build a corelation between the variation in stock prices to the positive/negative news concerning with a particular company

Working with machine learning libraries (**scikit-learn**) in Python to analyse the stock price data trends of over a hundred IT companies from Yahoo Finance

DECEMBER 2013

Aasaanjobs.com
Web Development

Worked as a **Web Developer** to build the website of emerging startup, Aasaanjobs.com

Created a dynamic backend database system for the site using popular Python based MVC framework, Django

Built a variety of Django based web apps for registration, signup, data entry of employers and employees, data display for a given set of sorting parameters and other utilities

MAY-JUNE 2013

Vaakya (Query Answering System)
Institute Technical Summer Project (ITSP), IIT Bombay

Created a first of its kind website which provides comprehensive information about institute's academic affairs at a single location

Created Python programs for crawling through IIT Bombay's internal network for professors' information, grading statistics, course content of any course offered in the institute

Awarded the **'Best Web and Coding Project'** under ITSP 2013. Showcased at the **'Annual Technical Exhibition-2013'**

Positions of Responsibility

March 2015-Present	**Editorial Board Member** *Institute Newsletter (Insight, IIT Bombay)* Led two-tier team of **150** journalists reaching out to over **10,000** students and **650** faculty members, especially executing impact and reform generating articles
August 2013-April 2014	**Web Manager** *Aavriti 2014, IIT Bombay* Responsible for developing the website for Aavriti 2014, annual technical festival of Electrical Department, with a footfall of over **2500**
August 2013-April 2014	**Computer Secretary** *Hostel 9, IIT Bombay* Responsible for solving of all LAN and computer related issues in the hostel In-charge of a Computer Room dedicated to all computer activities for 500 hostel inmates Awarded **Organizational Special Mention** for significant contribution towards the hostel
August 2013-April 2014	**Editorial Board Member** *Technical Newsletter (Lightsaber, IIT Bombay)* Covered all the important technical related issues and events inside IIT Bombay

Technical Proficiency

Programming	Python, Java, C++, Assembly, Verilog HDL, R
Web Development	PHP, HTML, MySQL, JavaScript, Django MVC, Neo4j
Circuit Design & Simulation	Eagle, LTSpice, NGSpice
Softwares	LaTeX, Qlikview, MS Office, Sony Vegas, MATLAB (Basics)

Key Courses

Electrical	Microprocessors, Communication Systems, Electromagnetic Waves, Electronics Devices & Circuits, Network Theory, Physics of Transistors, VLSI Design & CAD*, Microwave Integrated Circuits*, Power Electronics, Digital Signal Processing, Biosensors & BioMEMS
Mathematics	Calculus, Linear Algebra, Differential Equations, Complex Analysis, Data Analysis & Interpretation, Probability & Random Processes, Optimization Techniques*
Computer Science	Computer Networks& Security, Artificial Intelligence* Database Information Systems, Data Structures & Algorithms

* marked courses will be completed by December 2015

Extra Curricular Activities

SOCIAL SERVICE	Taught underprivileged kids under National Service Scheme (NSS)
	Associated with design of a survey generating app for monitoring rural development in Parbhani, Maharashtra
TECHNICAL	Designed and built a Remote Controlled Car under XLR8 2012
	Created a Scratch version of Sega's Sonic, which was inducted in the Scratch Hall of Fame
CULTURAL	Secured II position in Sophomore Design and Photography competition
	Special Mention in Sophomore Film Making competition
	Secured IV position in Group Dance in Freshiezza 2012
MISCELLANEOUS	Junior Design Engineer, DASH DAQ, IIT Bombay Racing Team 2013
	Content Developer at YForce, a youth promoting startup by IIT Bombay students