

Prabhat Agarwal

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4th Year CSE Undergraduate, IIT Kharagpur

Education

2013–Present **Computer Science and Engineering (B.Tech)**, IIT Kharagpur, West Bengal.

CGPA: 9.92/10(at the end of 6th semester)

2013 Indian School Certificate Examination(ISC), Maria's Day School, Howrah, West Bengal.

Aggregate: 96.83%

2011 Indian Certificate of Secondary Education Examination(ICSE), Maria's Day School, Howrah, West Bengal.

Aggregate: 95.43%

Awards and Achievements

2016 Received J.C. Ghosh Memorial Endowment Prize for securing highest CGPA in the department at the end of 6th semester.

2016 Secured 1st position in a team of 4 in event Code-O-Shuffle in Kshitij, 2016.

2015 Was awarded with Goralal Syngal Memorial Scholarship for securing 2nd highest CGPA at the end of 4th semester among the students of department of CSE, ECE and EE.

2015 Received Sachinandan Basak Memorial Endowment Prize for best NSS volunteer student of the year 2014-15 among about 400 students.

Internships

May-Jul 2016 **Summer Analyst**, Goldman Sachs Group, Inc.

- Developed a module system, following JDK9's module specifications, for firm's platform based on JDK8 providing interoperability between several JVM languages and firm's proprietary language.
- The module system provides means to organize code, to have encapsulation, communication contract and loose coupling between modules leading to enhanced platform scalability, integrity and performance.
- Designed a JSON specification to define a module's communication contract, including its exposed interfaces and dependencies.
- Enhanced the platform's distributed build system to enforce the module's communication contract during build, ensuring reliable configuration.
- Built a runtime system using Java class-loader hierarchy to enforce encapsulation at runtime and provide loose coupling.

- May-Jul, 2015 **Summer Intern**, Prof. D B Phatak, IIT Bombay.
- Developed a website (codzilla.org.in) in a team of 4 to help users learn programming languages from basics.
 - The website provides practice questions of various types and levels, and also provides a platform to create new questions wherein parts of code can be made visible, invisible or editable for the user.
 - Worked primarily on the client side, using javascript and jquery, and also implemented the HTML processing module in Java as part of backend to manipulate the html to provide the facilities described above.

Projects

- Jan-Apr 2016 **Citation Recommendation based on citation contexts**, Prof. Pawan Goyal.
- Developed (in team of 6) a system to recommend scientific articles to cite in a paper given the citation context.
 - Used different ranking schemes: tf-idf, BM25, LSA, and their variants giving different weightage to different sections of a document.
 - Achieved a Mean Reciprocal Rank (MRR) of 0.2 on a test dataset of 1000 scientific articles.
- Jan-Mar 2016 **Online Course Management System**, DBMS Project.
- Developed (in a team of 3) an online learning system using CodeIgniter in PHP for backend, MySQL for database and Materialize for frontend.
 - The system allows students to take courses, watch lectures, solve quizzes, etc., and also allows faculty to create courses, upload lectures, create different types of quizzes, etc.
 - Developed both the frontend and backend of the faculty module of the system.
- Aug-Nov 2015 **Simple compiler for TinyC**, Compilers Project.
- Compiler for a reduced version of C targeted at x86_64 architecture.
 - Developed in C++. Used Flex for lexical analysis, Bison for syntax analyzer and TAC code generator and GAS as assembler for the assembly code generated.
- Aug-Nov 2015 **Detection and Analysis of abuses in code-mixed tweets**, Prof. Pawan Goyal and Dr. Monojit Choudhury (Microsoft Research India).
- Developed a rule based classifier (with 72% precision) to detect abuses in romanized Hindi and English tweets.
 - Used phonetics to match words in Romanized Hindi to account for large variations in spelling.
 - Analyzed the relation of abusing behavior of users with their gender, location, tweet type, etc.
- Mar 2015 **PlotIt**, Opensoft, IIT Kharagpur.
- Team(of 10) secured 4th place in the competition.
 - Developed in python. Used sympy, matplotlib and mayavi for plotting.
 - Responsible primarily for building the GUI using PyQt - a python wrapper for Qt.
 - Implemented accordion interface to specify the different plots and related settings for the plot.

Technical Experience

Proficient With

languages C, C++, Java, Python, JavaScript, HTML, CSS
softwares and STL, JQuery, Bootstrap
libraries
operating Windows, Linux
system

Have Experience With

languages C#, Verilog, PHP, MySQL
softwares and Bison, Flex, CodeIgniter. NLTK
libraries

Relevant Coursework

- Social Computing
- Information Retrieval
- Natural Language And Processing*
- Parallel and Distributed Algorithms*
- Database Management Systems
- Machine Learning*
- Artificial Intelligence*

*To be completed before Dec 2014

Extra Curricular Activities

2013–2015 **Volunteer, National Service Scheme Unit-3, IIT Kharagpur.**

- Team Leader of the gold winning unit in NSS Annual Camp-2014.
- Group Leader of the unit for the academic session 2014-2015.

2013–Present **Member, The KGPIan Game Theory Society, IIT Kharagpur.**

Studied various aspects of Game Theory and its applications. Published an article Inheritance and Game Thoery in The Strategist, the newsletter of the society about an application of multi-person prisoner's dilemma in real life.