

Abhinav Agarwal

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EDUCATION

- 2014–present **B.Tech in Electrical Engineering**, IIT Kharagpur.
CGPA - 9.46 (on scale of 10)
- May 2014 **12th Grade**, CBSE, New Delhi.
Aggregate - 95.4%
- May 2012 **10th Grade**, CBSE, New Delhi.
GPA - 9.4 (on scale of 10)

COURSEWORK

Undergraduate.

Algorithms (with lab)
Maths-1
Maths-2
Transform Calculus
Programming and Data Structures (with lab)
Signals and Networks (with lab)

EXPERIENCE

Kharagpur Robosoccer Students' Group

- Feb 2015 **Artificial Intelligence Team Member.**
–present KRSSG is SRIC (IIT Kharagpur) sponsored project (as a part of CFER) with Prof. Jayanta Mukhopadhyay as the principal investigator. KRSSG.
KRSSG won bronze in FIRA 2015.
- Robocup3d Simulation League.**
KRSSG is first Indian team to qualify for Robocup3d simulation which is scheduled to be held at Germany in July 2016.
- Implemented basic skill, tactics and utilities from scratch
 - Deriving team formation using Delaunay Triangulation
 - Implemented Dynamic Role Assignment with collision avoidance
 - Implementing Spline based kicking
 - Implemented Inter-Bot Communication
- Code-O-Soccer.**
Code-O-Soccer is a coding competition conducted by KRSSG.
I made a windows batch script to automate the evaluation process.

Deep Learning Neural Networks Project

- Dec 2015-present **Research Project.**
Research Project under Professor Debdeep Sheet
- Implemented Denoising Autoencoder
 - Implemented Dropout Autoencoder

Image Processing Winter Workshop

- Dec 2014 **Participant**, Computer Vision | Technology Robotix Society | IEEE certified.
Implemented blob detection, noise reduction, shape detection, edge detection using OpenCV in C++.

Open Source Contributions

- Dec 2015- **Contributor**, SymEngine | Sympy | C++.
- March 2016 SymEngine is a C++ symbolic manipulation library.
- Successfully merged 13 pull requests pushing total 45 commits.
 - Listed as author.
 - Implemented various symbolic functions like polygamma, error, loggamma, beta etc along with their evaluations, substitutions and differentiation.
 - Implemented a 1 line grep code that replaced the older python script for lint checking.

Nehru Hall OpenSoft 2016

- March 2016 **Team Member**, Plot extraction from pdf | OpenCV | C++ | Python.
Problem statement was to extract data of graphs from pdf of scanned images.
I implemented axis detection, points extraction from curve.

SKILLS

- Language English, Hindi
- Programming Languages C, C++, Python
- Concepts OOPS, STL, Multithreading, Data Structures & Algorithms, Image Processing
- Platforms Windows, Linux
- Tools Git, Bash, Batch scripting, Matlab, Aircrack-ng, Reaver, Protobuf, OpenCV, Theano

ACHIEVEMENTS

- Department rank 2 (out of 110 students (approx))
- Qualified for **ACM-ICPC** (2015) Amritapuri regionals.
- Secured rank in top 0.1% in JEE Mains 2014 (out of 1.3M students (approx))
- Secured rank in top 0.5% In JEE Advanced 2014 (out of 0.15M students (approx))
- Achieved Excellent (EX) grade in Programming and Data Structures
- Represented second year students of Electrical Engineering department in meeting with chairman of Board of Governors of IIT Kharagpur