Aniket Bajpai

Sophomore, Computer Science

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Education

2014–2018 **Bachelor of Technology in Computer Science and Engineering**, *IIT Delhi*.
CGPA – **9.273** (10 in 2nd semester)

2012–2014 **Senior Secondary**, *Higher Secondary Certificate Examination(HSC)*,
Percentage - 86.0.
Top 1% in Maharashtra

2012 **Secondary**, *Indian Certificate of Secondary Education Examination (ICSE)*.
Percentage - **97.0**

Achievements

Institute Merit Award — Was placed among the **top 7 percent** of IIT Delhi in the first and second semesters of the 1st year (2014-2015).

Aditya Birla Scholarship — Continuing recipient of the **Aditya Birla Fellowship 2014** in the engineering stream awarded to 16 students across all engineering institutes in India

IPhO 2014 — Represented India at the 45th **International Physics Olympiad (IPhO), 2014** and secured **Gold medal**.

APhO 2013 — Represented India at the 14th **Asian Physics Olympiad (APhO)**, 2013 and secured **Bronze medal**.

IJSO 2011 — Represented India at the 8th **International Junior Science Olympiad, 2012** and secured **Silver medal**.

KVPY — Secured **All India Rank 2** in **KVPY** (Kishore Vaigyanik Protsahan Yojana) Exam 2012 conducted by the IISc, Bangalore and was awarded Fellowship in the Science Stream.

IIT-JEE 2014 — All India Rank **55** in IIT-JEE Advanced 2014 exam among 150,000 students qualified to take the JEE Advanced, selected out of over 1.3 million students who took JEE-Mains exam.

IChO — Qualified for the Orientation cum Selection Camp for the **International Chemistry Olympiad** 2014.

IMO — Qualified for the Orientation cum Selection Camp for the **International Mathematics Olympiad** 2013.

NTSE — Secured **All India Rank 1** in **NTSE** (National Talent Search Exam) 2010, and was awarded NTS scholarship.

Projects

Ongoing **Virtual Assistant:**
- Developed a bot as part of a project with Wishup to automate operations.
- The messages were classified by the bot into various categories, and a different set of actions were taken for each category.
- Natural Language Processing was used to extract data for required category from user's messages

January to March 2016 **Cloud based backend for IoT applications:**
- Developed a home automation system using openhab.
- Extended openhab to develop a flexible and scalable cloud-based service backend for IoT applications
- Used mqtt protocol for lightweight communication between IoT devices.

August to October 2015 **App to convert text in image to speech:**
- Implemented preprocessing techniques such as local adaptive thresholding, deskewing, noise filtering and a customized, fine-tuned preprocessing algorithm on color images to make them suitable for OCR.
- Trained neural networks to perform OCR on the preprocessed image.
- This was developed as part of an initiative to aid physically challenged people by enabling them to read signboards, posters and all printed material in general.

February to April 2016 **Compiler for Imperative Language:**
- Implemented a scanner and parser in Haskell for given grammar.
- Performed code generation and optimization from generated abstract syntax tree.

October 2015 **Search Engine:**
- Developed an engine to search in a set of pages using given relevance function.
- The search engine was capable of searching for a single word as well as complex queries such as a phrase, any of the given keywords, or all of the given keywords
- Implemented the PageRank algorithm and a crawler to rank search results.

September 2015 **Article Classification into newsgroups:**
- Used supervised learning to classify articles into 8 newsgroups.
- The algorithm was able to classify 1470 test articles with an accuracy of 96% in 3ms.

January 2015 **Autonomous Robot for playing brick breaker game:** (Robotics Club IITD)
- Developed a bot to play the brick breaker game as part of a competition at Kshitij, IITKGP.
- Performed detection of bricks and ball in game from video and paddle was moved and rotated accordingly.

Relevant Courses Taken

Ongoing	Programming languages, Computer Architecture, Design Practices
Completed	Data Structures and Algorithms, Probability and Stochastic Processes, Discrete Mathematical Structures, Digital Logic and Hardware Design, Linear Algebra and Differential Equations, Calculus
Online(self)	Introduction to Machine Learning, Computer Vision, Digital Image Processing, Analysis and Design of Algorithms

Technical skills

Programming Languages	C++, Java, python: proficient; haskell, lisp, ruby: intermediate; c#: basic
Web	Codeigniter, web2py, php, mySQL, javascript, jQuery, CSS3, HTML5
Software	Matlab, Octave, Android Studio
Miscellanous	Scikit-learn, OpenCV, Tesseract, Openhab, Arduino, Google APIs (Custom Search, Maps, Translate, Text to speech), Google App Engine, git, bash

Extra Curricular Activities

- Competed as a team of 2 in the algorithm contest "Algorythm" at Tryst 2015, IIT Delhi, securing 2nd position.
- Competed in "Bugsmash", a contest to detect and remove bugs, at Tryst 2015, IIT Delhi, securing 3rd position.
- Competed in "Imagica", an image processing contest organized by Electronics Engineering Society, IIT Delhi ,securing 2nd position.
- Competed as a team of 2 and qualified in the Top -500 teams in the world in the 1st round of Codechef Snackdown, 2015.

Interests

I am interested in learning about all aspects of Computer Science Engineering in general and in **machine learning** and **computer vision** in particular. The projects I have completed and the activities I have participated in reflect my varied interests.
My hobbies include robotics, competitive coding and chess.

Others

- Contributed as an Academic Resource Person for the International Physics Olympiad, 2015 held in Mumbai, India in July 2015.
- Cleared grades 1-5 (Theory and Practical), Western music (keyboard) conducted by Trinity College, London.

References

- Prof. Saif Mohammed, Department of Electrical Engineering, IIT Delhi (saifkm@ee.iitd.ac.in)
- Prof. Shubhendu Bhasin, Department of Electrical Engineering , IIT Delhi(sbhasin@ee.iitd.ac.in)