Shashwat Shivam

Computer Science and Engineering

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Academic Details

Year	Degree	Institute	CGPA/Percentage
2016-2020 (Current)	B.Tech in Computer Science and Engineering	Indian Institute of Technology Delhi	9.63
2016	Class XII, CBSE	St.Joseph's Co-Ed School	96.2%
2014	Class X, CBSE	St.Joseph's Co-Ed School	10.00

Scholastic Achievements

- Secured **All India Rank 82** in Joint Entrance Exam Advanced - 2016 among 200 Thousand candidates.
- Won **IITD Semester Merit Award** in 2 out of 3 semesters (given to **top 7%** of all the students).
- Ranked in **Top 0.01%** among 2 million candidates appearing in Joint Entrance Examination(JEE Mains-2016).
- Qualified **KVPY** Exam in 'Kishore Vaigyanik Protsahan Yojana' by Indian Institute of Science given to top 1%.
- Became a National Talent Search Examination (**NTSE**) scholar for being in top 1000 at National level in 2014.
- Ranked in Top 1% in India in **NSEP**,**NSEC** and **NSEA** (National Standard Examinations).
- Awarded **Student of The Year** on graduating Higher Secondary for excellent academic performance.

Experience

Android App Development Internship Primebook, December 2017

- Worked on custom launcher for desktop like usability on android environment.
- Added options to launcher menu for using system APIs to perform standard functions including settings, power on/off.
- Optimized launcher menu for faster launch and search indexing and added functionality to resize menu.

Web Development Internship Anhad Music, May-July 2017

- Developed a Django based MVC back end for new website along with models and relations for events and members.
- Migrated database from old NoSQL based system to SQL system using python script.
- Provided API endpoints for Android application using Rest API Framework.
- Setup Social login system along with direct login from social networks like Facebook, Google etc.

Projects

ARM Processor Prof. Anshul Kumar, January-April 2018

- Implemented sub-parts used in a processor (ALU, Multiplier, Register File, Shift Register etc.) using VHDL.
- Built a multi cycle processor based on ARM instruction set architecture using the above sub-parts.

Starling Bird Flock Simulation Prof. Subhashis Banerjee, April-May 2018

- Developed program in C++ using OpenGL to simulate flocking of starling bird flight using relevant mathematical properties.

Toy Prolog Interpreter Prof. Sanjiva Prasad, April 2018

- Implemented a simple prolog interpreter in Ocaml using ocamllex for lexing and ocamlyacc for parsing.

- Built a sigma algebra engine in Ocaml supporting unification and substitution of terms.

Engineering Drawing Software   Prof. Subhashis Banerjee, Jan-April 2018

- Developed an engineering drawing software in C++ using Qt to work on 3D and 2D figures and their projections.
- Implemented algorithms to find projections of 3D figures (including hidden lines) and to form 3D figures from given 2D projections.

Infrared Image Skin Detection   Prof. Prathosh A.P., December 2017

- Collected and annotated dataset using Infrared Camera containing classes as skin / non-skin images.
- Predicted presence of skin in images using modified pre-trained VGG net further trained on new collected dataset,

Universal Asynchronous Receiver Transmitter (UART)   Prof. Anshul Kumar, October-November 2017

- Built a UART with the help of FPGA board and VHDL language capable of transmitting data to computer.
- Implemented the design to transmit ASCII characters and pre-saved messages at 9600 baud rate via USB cable.

Elevator Control System   Prof. Anshul Kumar, September-October 2017

- Created a lift control system using VHDL with the ability to receive requests from inside or outside the lift.
- Added functionality to resolve requests to provide fastest possible lift routes to requested floors.
- Achieved the proper working of the system by creating FSM chart describing various states of lift.

Hindi Named Entity Recognition   OpenEd AI Hackathon, July-Aug 2017

- Implemented named entity recognition system to detect the various entities in a sentence in Hindi language.
- Used vocabulary library to train model using the pre-built python CRF suite library.

Canteen App   Prof. M.Balakrishnan, May-July 2017

- Created an android application to note transactions happening within the lunch club and to display all user details.
- Setup MySQL database on a VM to store data of menu,users,balance etc. from android application.
- Setup API endpoints using PHP on a VM to upload data and keep application in sync with on-line database.
- Created website to visualize data of transactions and show instant accounting of specified time.

File Send App   Dev Club IIT Delhi, May-July 2017

- Worked with a team to develop a web application capable of sending files from browser to browser.
- Used Socket.Io as a signaling server to exchange meta-data between users and to select partner to exchange data.
- Used WebRTC technology to initiate peer to peer connection between browsers.

Relevant Courses

- **Computer Science:**   (*Courses currently pursuing)
  Programming Languages*, Computer Architecture*, Design Practices*, Data Structures & Algorithms, Discrete Mathematics, Digital Logic and System Design, Introduction to Computer Science.

Technical Skills

- **Programming Languages:** C, C++, Python, Java, JavaScript, NodeJS, VHDL, PHP, OCaml, Prolog.

- **Frameworks:** Django, Bootstrap, JQuery, MongoDB, MySQL, TensorFlow.

Extra Curricular Activities

- Microsoft Student Partner since August-2017
- Member of DevClub IIT Delhi since March-2017
- Member of Robotics Club IIT Delhi from September 2016 - March 2017