# Sujay S Kumar

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## Objective

To obtain a Graduate School Admission in the field of Computer Science and Engineering, followed by a career in Research & Development

- **Research Interests:** Computer Vision, Machine Learning, Social Network Analysis, Digital Image and Text Processing, Network Security, High Performance Computing.

## Education

- **PES Institute of Technology, Bangalore, India(080 2672 1983)** August 2013 - Present
  - B.E in Computer Science and Engineering
  - CGPA: **9.52 out of 10**

## Course Projects

- **Laser Projection System** Oct 2013 - Nov 2013

  Advisor : *Dr. Raghavendra Rao, Science and Humanities Dept.,PESIT*
  - Developed a laser projection system which can be used to project static and dynamic images on any surface using a single laser beam. The project was Arduino based and the movement of the laser was programmatically controlled by galvanometers which in turn were controlled by the Arduino board.

- **Smart Meter** May 2014 - June 2014

  Advisor : *Prof. Nitin V Pujari, HOD, CS Dept., PESIT*
  - Developed an add-on to the existing Energy Meter which encompasses all the basic functions of a standard smart meter at a fraction of the cost. Upon the request of the user, the camera positioned at a suitable angle captures the image of the meter reading. The image is then processed to get only the reading (removal of noise). The image is then processed by an OCR (optical character recognition), which converts the image to a readable text format. The text file is then sent to a registered mobile number of the user via an SMS. Based on certain algorithms, the energy consumption analysis is made. An online database is maintained in which the user consumption of energy is kept track of and which in turn helps in efficient management of power consumption at an affordable price.

- **IlluminaText** Oct 2014 - Nov 2014

  Advisor : *Prof. Srinivasa Murthy, Assoc. Prof., CS Dept., PESIT*
  - Developed a fully functioning text editor cum Java IDE along with features like auto indentation of code, finding and replacement of tokens, Syntax highlighting, highlighting of classes from the same package, compiling and running of Java code. The project was completed as part of Data Structures in Java course. All the features were implemented using data structures in Java including Stacks, Linked List, n-ary Trees and Binary Search Trees.

- **Social Network Analysis using NodeXL**

  Advisor : *Prof. Nitin V Pujari, HOD, CS Dept., PESIT* Sept 2014 - Nov 2014

  Organization: *Ordell Ugo*
  - The following tasks were executed as part of the project at Ordell Ugo.
    a) Importing of meta data required for analysis from various social networking sites like Facebook and Twitter
    b) Analysis of the meta data including the inter personal relationships between the person logged in and others on the social networking sites
    c) Generation and Analysis of the Social Network Graph using NodeXL
    d) Calculation and analysis of various Graph Metrics on the Graph Model Object including various metrics like In-Degree, Out-Degree, Betweenness Centrality, Closeness Centrality, Eigenvector Centrality, Page Rank and Clustering Coefficient.

- **IPL Predict!** April 2015 - May 2015

  Advisor : *Prof. Srinivasa Murthy, Assoc. Prof., CS Dept., PESIT*
  - It is an Android application that implements a custom Prediction Algorithm in order to predict the winner of any IPL match. It has been published on the Google Play Store. The application uses the data from the all previous IPL matches, the players' statistics, team performances, stadium history and numerous other stats in order to predict the winner of any IPL match with an accuracy of up to 85%. The application requires the user to choose the 2 playing teams, the respective player for each team, and the outcome of the toss. The app, using the most recent data, will compute the result based on all the factors mentioned above.

- **Web Development in Django**
  Advisor : *Mr. Sandeep Raju, Product Engineer, Plivo Inc.*                    May 2015 - July 2015
  Organization: *Plivo Inc.*

    - The following tasks were executed as part of the Developer Team at Plivo Inc., Bangalore.
      a) Building REST APIs for the Company database models from the ground up using Django and Django REST Framework.
      b) Implementation of basic authentication and permissions for API calls
      c) Building an Operations and Control Dashboard for the Support Team at Plivo Inc.

## Internships

- **Summer Research Intern**                                                   May 2014 - July 2014
  Place : *Ordell Ugo, PES Institute Of Technology*
- **Developer Intern**                                                          May 2015 - July 2015
  Place : *Plivo Inc., Bangalore*

## Key Courses

- Advanced Data Structures
- Computer Architecture and Organization
- Programming in C
- Analysis and Design of Algorithms
- Micro-processors
- Advanced Python Programming
- Database Management
- Digital Design
- Programming in PHP

## Other Projects

- Open Source contributor to Django Project, one of the largest open source web framework used extensively by the industry, including NASA, OpenStack, Mozilla and National Geographic.
- Built and maintained www.aatmatrisha.in, the official website of Aatmatrisha, one of the biggest techno-cultural fests organized by PESIT, in Karnataka.
- Built an Android app, MoneyTracker, which acts as your Digital Personal Assistant by keeping track of your expenses and other such important appointments. This is done by screening the SMS Inbox for critical information in real time and generating a graphical analysis of your expenditure.
- Built an Android app, ePrescription, that moves the whole process of medical consultation and prescriptions right into your phone. Your prescriptions are stored digitally in your phone which eliminates problems like misplacement of prescriptions, illegible hand writing etc by storing the entire history of every prescription written out to you. You can even conduct a research of your own using the inbuilt feature of Google Search. You can video call your authorised doctor for any consultation and even schedule an appointment with him, all from your phone.
- Built a web application, NullSpace, which tries to implement Hierarchical Learning structure to online tutor based distance learning framework.It allows students upto a depth of 2 and each level of students get promoted to the higher level as soon as student of that level finish the course.

## Workshops/Talks Attended

- **Android and AdMob workshop**                                               Feb 2014
  Speakers : *GDG Bangalore*
  Venue: Google India Office, Bangalore

- **Programming using JavaScript**                                             Oct 2014
  Speakers : *Dr.Jey Veerasamy (University of Texas,Dallas)*
  Venue: PES Institute Of Technology

- **SimpliHack**                                                                March 2015
  Speaker : *CEO, SimpliLearn*
  Venue: SimpliLearn, Bangalore

## Skills

- **Languages:** Java, C, C#, Python, PHP, JavaScript, HTML5, CSS, jQuery, Android Debug Bridge (ADB)
- **Technologies:** Django, Django REST Framework, Android, BackboneJS, Flask
- **Operating System:** Linux, Unix

## Co-Curricular Activities and Positions of Responsibilities

- Member Technical Staff at Ordell Ugo
- Member of the Core Organizing Committee of Aatmatrisha 2015, one of the biggest techno-cultural fests in Karnataka.
- Head of Web Development at Aatmatrisha.
- Member of the PES Debating Society(DebSoc)
- Represented PESIT in the International Debating Competition organized by Gujarat National Law University at Gandhinagar, Gujarat
- Represented PESIT in the National Debating Competition (MS Ramaiah Memorial Parliamentary Debate) conducted by MS Ramaiah Institutions at Bangalore.
- Worked as the Class Representative of my batch during the academic year 2013-2014.
- Social volunteer at CSI Christ Church, Chikballapur.