# Sunil Pandey

Computer Science & Engineering | Mathematics
Indian Institute of Technology Kanpur

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## EDUCATION

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|---|---|---|
| 2014–Now | **Bachelor of Science** | Computer Science \| Mathematics |
| | | CGPA: 9.3/10.0 |
| 2014 | **Grade XII, CBSE** | Percentage: 94.6% |
| 2012 | **Grade X, CBSE** | CGPA: 10.0/10.0 |

## WORK EXPERIENCE

### Summer Analyst, Goldman Sachs
*Compliance Division, Bangalore*     *May-Jul'18*

- Employed machine learning techniques for extracting topic tags for a document
- Pre-processed firm data to get the significant content of the document employing parsing techniques
- Implemented various probabilistic approaches like LDA, HDP & CTM to generate topic vectors
- Implemented Map-Reduce Jobs on Apache Hadoop framework to deal with large scale of dataset
- Developed a UI using apache tomcat server displaying tags to given text representing its context

### Research Intern, New York University
*under Dr. Yao Wang, NYU*     *May-July'17*

- Implemented different baseline model employing tensorflow, numpy library to predict the saliency and user view in 360 degree video
- Worked on the implementation of LSTM & CNN to design a model for user view prediction
- Obtained less than 10% error in view prediction

### RTE Internship, IIT Kanpur-UT Dallas
*under Dr. Ovidiu Daescu, UTD*     *May-July'16*

- Worked on finding two edge disjoint spanning trees in a graph with 2n-2 vertices
- Studied Robert Tarjan's research paper; proved lemma for allocation of edges of 2-4 degree vertices
- Proposed an algorithm reducing the edges to less than n, a step towards linear time algorithm

## LEADERSHIP ROLES

### Council Head     *Mar'18 - Present*
*Science and Technology Council*

- Leading a team of 51 coordinators and executives, managing affairs of 11 clubs and 8 institute teams
- Guided and managed strict timeline in organizing Takneek'18 with 40 events across two weeks
- Represented IIT Kanpur at Pan-IIT Tech Meet Board meeting for drafting meet's constitution

### Contingent Leader     *Jan'18*
*6th Inter IIT Tech Meet, IIT Madras*

- Led 40 member team participating in 10 diff. events
- Bagged one gold, two silver and one bronze medal
- Exhibited 14+ projects; Initiated collaboration with DRDO, Govt. of India for soldier support event

## AWARDS AND ACHIEVEMENTS

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|---|---|---|
| Now | **Department Rank 1** | among 51 students |
| 2016 | **Academic Excellence Award** | IIT Kanpur, 2015 and 2016 |
| 2014 | **All India Rank 1031** | JEE Advanced, 150,000 candidates |
| 2013 | **KVPY Scholarship awardee** | Scholarship by IISc, Govt. of India |
| 2016 | **Shortlisted, Interview Round** | Honda-YES Award (10/41 students) |
| 2010 | **State Rank1, Olympiad Rank 10** | International Olympiad, Mathematics |

## PROJECTS

### GOGO-MIPS Compiler for Golang
*Under Dr. Subhajit Roy, IIT Kanpur*

- Implemented a fully functional GoLang to MIPS compiler using gocc compiler toolkit in GoLang
- Incorporated multiple return values, nested loops, defer, struct among other features
- Exercised efficient register allocation policy along with other low level optimizations

### Visual Question Answer
*Under Dr. Harish Karnick, IIT Kanpur*

- Experimented with multiple learning models to predict the answers of questions based on images
- Implemented Answer Type Prediction based, Question guided Attention, Knowledge based models
- Proposed a Joint Embedding approach with Image guided Attention on Question

### Vehicle Recognition
*Under Dr. Gaurav Pandey, IIT Kanpur*

- Developed framework for registration and detection of vehicles using template matching
- Employed OpenCV library, learning models & pattern matching to get high accuracy OCR results

### Web Development, IITK-NYC Office
*under Dr. Manindra Agarwal, IIT Kanpur*

- Implemented local cache to store values which haven't been sent to server using Angular2 framework
- Contributed towards integrating backend API calls to display comments on frontend

## COURSEWORK / TECHNICAL SKILLS

- Algorithms II A ● Numerical Computations A*
- Compiler Design A ● Probability&Statistics A
- Computer Organization A ● Data Structures A
- Machine Learning A ● Operating System B
- Computer Networks(Ongoing)

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|---|---|
| LANGS | C/C++, Go, Java, Python, Verilog, R |
| UTILS | OpenCV, Git, Angular, MySQL |
| OS | Linux, Windows |