

# Akash Deep Singh

UNDERGRADUATE STUDENT · ELECTRONICS AND COMMUNICATION ENGINEERING

New Delhi, India

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## Education

### IIIT-D (Indraprastha Institute of Information Technology, Delhi)

New Delhi, India

B.TECH IN ELECTRONICS AND COMMUNICATION ENGINEERING

Aug. 2014 - PRESENT

- **GPA: 8.81/10** (till VII semester) [Top 2 in ECE]
- **Coursework:** Wireless Communication, Wireless System Implementation, Radar Systems, Internet of Things, Wearable Computing, Antenna Theory and Design, Integrated Electronics, Data Structures and Algorithms, Computer Organization, System Management, Differential Equations, CMOS, Digital VLSI Design, Digital Communication Systems, Calculus, Probability and Statistics, Linear Algebra, Embedded Systems, Digital Circuits, Fields and Waves, Principles of Communication Systems

### Bal Bhavan School

Bhopal, India

2014

- **AISSCE 2014** (CBSE Class XII Board Examinations) : **94.6%**  
**Subjects:** Mathematics, Physics, Chemistry, Informatics Practices, English
- **AISSE 2012** (CBSE Class X Board examinations) : **GPA 10/10**  
**Subjects:** Mathematics, Science, Social Studies, English, Hindi

## Publications

1. **Akash Deep Singh**, Shelly Vishwakarma, and Shobha Sundar Ram. "Co-channel interference between WiFi and through-wall micro-Doppler radar." In **Radar Conference (RadarConf), 2017 IEEE**, pp. 1297-1302. (May 8-12, 2017) Seattle, WA, United States. ([Link](#))
2. **Akash Deep Singh**, Shobha Sundar Ram and Shelly Vishwakarma, 2018, April. "Simulation of the radar cross-section of dynamic human motions using virtual reality data and ray tracing". In **Radar Conference (RadarConf18), 2018 IEEE**, pp. 1555-1560. (April 23-27, 2018) Oklahoma City, OK, United States. ([Link](#))
3. Naveen Gupta, **Akash Deep Singh**, Parth Shrivastava and Vivek Ashok Bohara. "A Two-Way Cooperative D2D Communication Framework for a Heterogeneous Cellular Network." In **Wireless Personal Communications. (Submitted)**

## Skills

- **Programming Languages:** [Proficient: C, Matlab, Python]; [Prior Experience: Embedded C, Spice, JavaScript]
- **Tools and Technologies:** GNU Radio, LabView, Cadence Virtuoso, Eldo Spice, Wireshark, Advanced Design System, LTSPice, Hostapd, iPerf, NodeJS, AngularJS, Bootstrap

## Research

### Analysis and measurements of through-wall radar and Wifi coexistence

New Delhi, India

UNDER THE SUPERVISION OF **DR. SHOBHA SUNDAR RAM**

Aug. 2016 - Nov. 2016

- Measured the effect of a through-wall radar on wifi and vice versa when both are operated at same frequency. Also, we are working to suggest possible solutions to overcome this interference problem.

### Micro Doppler Signature Simulation using Kinect Data

New Delhi, India

UNDER THE SUPERVISION OF **DR. SHOBHA SUNDAR RAM**

Jan. 2017 - Jan. 2018

- Using the Skeletal data obtained from a Kinect v2 sensor to obtain accurate radar micro-doppler simulations.
- Currently trying to optimise this technique for higher frequencies.

## A Two-Way Cooperative D2D Communication Framework for Heterogeneous Cellular Network

New Delhi, India

UNDER THE SUPERVISION OF **DR. VIVEK ASHOK BOHARA**

July, 2017 - Dec. 2017

- Using a two-way OFDMA based cooperative device-to-device communication (C-D2D) framework in a heterogeneous cellular network to compensate for infrastructure failure when 2 base stations want to communicate with each other.

## Projects

### Project AVA: Smart backpack for preventing child abduction

New Delhi, India

UNDER THE SUPERVISION OF **DR. AMAN PARNAMI**

Aug. 2017 - Present

- Designed and Developed an augmented backpack - along with an accompanying Android application - for school-going children to help prevent child abduction.

### Smart MarketPlace (Selected among the top 6 projects in IoT course)

New Delhi, India

UNDER THE SUPERVISION OF **DR. JUHI RANJAN**

Jan. 2017 - Present

- A smart marketplace that automatically adds the items picked by a customer to her cart and presents the bill during checkout.

### OFDMA based D2D Communication using USRP

New Delhi, India

UNDER THE SUPERVISION OF **DR. VIVEK ASHOK BOHARA**

Feb. 2017 - May. 2017

- Used USRPs as nodes of a cellular network as well as a D2D pair. The performance of Cellular link was calculated in the presence of a D2D pair(source of interference) in both overlay and subcarrier sharing mode.

### GPS controlled Surveillance Bot

New Delhi, India

UNDER THE SUPERVISION OF **DR. JYOTI SINHA**

Mar. 2015 - May. 2015

- A Raspberry Pi rover that can navigate using GPS coordinates and click images and videos.

## Experience

### IIIT-D

New Delhi, India

TEACHING ASSISTANT

Aug. 2016 - Present

- Under **Prof. Raj Ayyar**
  - Course:** Critical Thinking, . . . . . Jan. 2018 - May. 2018
  - Course:** Perspectives on Knowledge, . Aug. 2017 - Dec. 2017
  - Course:** Philosophy of Religion, . . . . Jan. 2017 - May. 2017
  - Course:** Philosophy of Literature, . . Aug. 2016 - Dec. 2016

As a TA, my responsibilities are organizing presentations, researching course material, solving student doubts and assisting the professor in grading submissions.

### Uber

New Delhi, India

MARKETING INTERN

Jul. 2016 - Aug. 2016

- Worked on marketing campaigns and strategic tie-ups

### Aashansh Foundation

New Delhi, India

WEB DEVELOPMENT

May. 2016 - Jul. 2016

- Built a new website and course portal for the Aashansh Foundation which has enabled underprivileged students to access free education and skill development programs easily.

### ADEPT Consulting Partners

New Delhi, India

MARKET RESEARCHER

Jun. 2015 - Jan. 2016

- Worked in the Legal Recruitment team in data collection and analysis.
- Assisted multiple organizations in finding the right candidate.

## Positions of Responsibility

### Bal Bhavan School

Bhopal, India

HEAD BOY (SCHOOL CAPTAIN)

Jul. 2013 - Mar. 2014

- Organized Events like Sports Day and Teachers Day during my tenure.
- Worked closely with the school management in implementing new schemes and policies for the benefit of the students.

## Student Senate @ IIIT-D

COORDINATOR

*Bhopal, India*

*April. 2017 - Present*

- I am the student representative to the Undergraduate Committee (UGC) and the Institute Senate.
- I work closely with the academic department to formulate new academic policies and resolve the issues that students are facing.

## Mentor Review Board @ IIIT-D

MEMBER, MENTOR REVIEW BOARD)

*Bhopal, India*

*April. 2017 - Present*

- Helped freshman who are facing academic or social issues.
- Helped in running the whole mentor program in which juniors and seniors help freshman find their footing in the university.

## Placement Committee at IIIT-D

DY. CONVENER

*New Delhi, India*

*Jul. 2017 - Present*

- Coordinated with Hiring Firms during the placement season.
- Successfully managed the complete placement process.

## Cyborg (Robotics Club) at IIIT-D

COORDINATOR

*New Delhi, India*

*Jan. 2016 - Jan. 2017*

- Conducted Sessions for teaching students the basics of Robotics and helping them start working on their own projects.
- Promoted the maker culture in the Institute.

## The Philosoc (Philosophy Club) at IIIT-D

COORDINATOR

*New Delhi, India*

*Aug. 2016 - Apr. 2017*

- Organised Panel Discussions and Presentations on Philosophical Topics

## Placement Committee at IIIT-D

MEMBER

*New Delhi, India*

*Feb. 2016 - Apr. 2017*

- Coordinated with Hiring Firms during the placement season.
- Successfully managed the complete placement process.

## Institute Library at IIIT-D

LIBRARY REPRESENTATIVE

*New Delhi, India*

*Aug. 2016 - PRESENT*

- Successfully implemented various reforms in the Institute Library like increasing the opening hours during exams.
- Organised seminars and sessions for students like "GRE Workshop" and "Writing a Research Paper"

## School Magazine at Bal Bhavan School

EDITOR

*Bhopal, India*

*Apr. 2008 - Mar. 2011*

- Worked on content editing and curating articles.

## Honors & Awards

2010	<b>NTSE Scholar</b> , Awarded the National Talent Search Scholarship by NCERT (National Council Of Educational Research And Training), Government of India in 2010. Out of 500,000 students who appear for the exam, only 1000 students are granted this prestigious scholarship.	<i>India</i>
2014	<b>Student of the Year (All-Rounder) 2013-14</b> , Bal Bhavan School	<i>Bhopal, India</i>
2017	<b>First Prize, Innovation Challenge</b> , Research Showcase 2017, IIIT-D	<i>New Delhi, India</i>
2017	<b>Dean's List for academic achievement, IIIT-D</b> , Got special mention in the dean's list of academic achievers 2016-17 for obtaining a SGPA of 9.3/10 in the academic year 2016-17.	<i>New Delhi, India</i>
2010	<b>Runners-Up</b> , Horlicks WizKids	<i>Bhopal, India</i>

## Program Committees

2016	<b>Organising Team</b> , Esya'16 (Technical Festival) at IIIT-D	<i>New Delhi, India</i>
2015	<b>Organising Team</b> , Odyssey'15 (Cultural Festival) at IIIT-D	<i>New Delhi, India</i>

## Test Scores

2017	<b>GRE</b> , 325/340 (Quant = 170/170, Verbal = 155/170, AWA = 4)
2017	<b>TOEFL</b> , 113/120 (R = 30/30, L = 30/30, S = 24/30, W = 29/30)

## Languages

- **English:** Full Professional Proficiency
- **Hindi:** Native Proficiency

## References

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1. Dr. Shobha Sundar Ram, IIIT-D ([shobha@iiitd.ac.in](mailto:shobha@iiitd.ac.in))
2. Dr. Vivek Ashok Bohara, IIIT-D ([vivek.b@iiitd.ac.in](mailto:vivek.b@iiitd.ac.in))
3. Prof. Raj Ayyar, IIIT-D ([raj@iiitd.ac.in](mailto:raj@iiitd.ac.in))