

Akash Deep Singh

PH.D. STUDENT · ELECTRICAL AND COMPUTER ENGINEERING

Los Angeles, CA, USA

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Education

University of California Los Angeles (UCLA)

Los Angeles, CA, USA

PH.D. IN ELECTRICAL AND COMPUTER ENGINEERING

Sep. 2018 - PRESENT

- **Advisor:** Prof. Mani Srivastava

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

New Delhi, India

B.TECH IN ELECTRONICS AND COMMUNICATION ENGINEERING

Aug. 2014 - May 2018

- **GPA: 8.86/10**[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
- **AISSCE 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

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

New Delhi, India

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

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

New Delhi, India

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

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

New Delhi, India

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)

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

New Delhi, India

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

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

New Delhi, India

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

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

New Delhi, India

Mar. 2015 - May. 2015

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

Experience

IIIT-D

TEACHING ASSISTANT

New Delhi, India

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

MARKETING INTERN

New Delhi, India

Jul. 2016 - Aug. 2016

- Worked on marketing campaigns and strategic tie-ups

Aashansh Foundation

WEB DEVELOPMENT

New Delhi, India

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

MARKET RESEARCHER

New Delhi, India

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

HEAD BOY (SCHOOL CAPTAIN)

Bhopal, India

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	NTSE Scholar , 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	Student of the Year (All-Rounder) 2013-14 , Bal Bhavan School	<i>Bhopal, India</i>
2017	First Prize, Innovation Challenge , Research Showcase 2017, IIIT-D	<i>New Delhi, India</i>
2017	Dean's List for academic achievement, IIIT-D , 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	Runners-Up , Horlicks WizKids	<i>Bhopal, India</i>

Program Committees

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

Test Scores

2017 **GRE**, 325/340 (Quant = 170/170, Verbal = 155/170, AWA = 4)

2017 **TOEFL**, 113/120 (R = 30/30, L = 30/30, S = 24/30, W = 29/30)

Languages

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

References

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