

# Sukhdeep Singh

Technical Lead, Network Division  
Cloud System Design R&D Team  
Samsung R&D India-Bangalore (SRI-B)



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## EXPERIENCE

Sept.01, 2016 – Present

### Technical Lead, Cloud System Design R&D Team, Network Division Samsung R&D India-Bangalore (SRI-B)

- Impact Analysis of Core Networks 3GPP specifications.
- Worked on site at Samsung Electronics, HQ, South Korea and handled 18 features of global EPC 7.0.0 package.
- Worked in Samsung Bangalore on EPC 8.0.0 package and handled 4 features exclusively.
- Statement of Compliance for Core Networks Rel. 12 and Rel. 13 3GPP specifications.
- System Designing of E2E 5G Virtual Networks (Current Project)
- Provisionally filled 3 patents.
- Published 4 research papers after joining Samsung R&D Bangalore. (2 conference & 2 journals).

Sept. 01, 2013 – June 20, 2016

### Teaching Assistant

Sungkyunkwan University, South Korea

Roles and responsibilities:

- Handle 2-3 bachelors cum masters courses in each semester (for six semesters)
- Assist professor in designing course curriculum.
- Teach Bachelor students (theoretical aspect of the subject plus practical aspect)
- Design examination papers and conduct examinations.
- Help professor in final grading of the students.
- Conduct special workshops to enhance the subject knowledge of the students.

## TRAININGS & INTERNSHIPS

Feb. 2013 – June 2013

### Online Research Intern

East Carolina University, Greenville, USA

Petri Net modeling and analysis of UMTS and LTE networks.

June 2012 – July 2012

### Research Intern

Sungkyunkwan University, South Korea

Petri Net modeling and analysis of UMTS and LTE networks.

May 2011 – June 2011

### Onsite Live Project Training

Mahindra Satyam, Mumbai, India

Project planning and scheduling of Aditya Birla Power cum Cement plant, Raipur, Chhattisgarh, India.

July 2011 – July 2011

### Onsite Training

Nokia Siemens Networks, Jaipur, India

Architectural study of Global System for Mobile Communication (GSM).

## EDUCATION

### Ph.D. Sungkyunkwan University, Suwon, South Korea | 2016

GPA: 4.44 / 4.5

### M.Tech, Software Engineering, SGVU, Jaipur, India | 2013

Course Work: SGVU 70% Agg. (First Division)

Thesis: ECU, GREENVILLE, USA

### B.Tech, Computer Science & Engineering, SGVU, Jaipur, India | 2012

71% Agg. (First Division)

### D.A.V. Sen. Sec. School Bathinda, India | 2008

XII CBSE, 80% Agg.

### St. Xavier's Sen. Sec. School, Bathinda, India | 2006

X CBSE | 91.4% Agg.

## Ph.D. RESEARCH DETAILS

Sept. 01, 2013 – Aug. 23, 2016

### Lab Head, Mobile Ubiquitous Systems Information Center

Sungkyunkwan University, South Korea

#### Projects Undertaken:

- Mobile video delivery architecture and scheduling over next generation wireless networks.
- Social aspect of upcoming 5G network technologies.
- PCID Allocation for 5G ultra dense networks.
- Social Cloud Radio Access Networks
- Customized D2D Services.

#### Thesis Title:

Video Delivery Framework for Next Generation Wireless Networks

#### Guide:

- Dr. Navrati Saxena, Associate Professor, CICE Dept., Sungkyunkwan University

#### Co-authored papers with:

- Dr. HanSeok Kim, Vice-President, Samsung Electronics, HQ, South Korea.
- Dr. Abhishek Roy, Principal Engineer, Samsung Electronics, HQ, South Korea.
- Dr. Pradipta De, Assistant Prof., Georgia Southern University, USA.

## PUBLICATIONS

1. [J] Sukhdeep Singh, N. Saxena, Abhishek Roy, Pradipta De, "Proximity Based Video Delivery Architecture for LTE Networks", IEEE/IET Electronics Letters, Vol. 52, Issue 11, May 2016, pp 984-986 (SCI). (Published)
2. [J] Sukhdeep Singh, N. Saxena, Abhishek Roy, HS Kim, "A Survey on 5G Network Technologies from Social Perspective", Taylor and Francis IETE Technical Review, Feb. 2016, pp: 1-10 (SCIE). (Published)
3. [J] Navrati Saxena, Sukhdeep Singh, Abhishek Roy, Deepti H. Ail, "NEST: novel eMBMS scheduling technique", Springer's Wireless Networks, Sept. 2015, pp: 1-14 (SCI). (Published)
4. [J] Sukhdeep Singh, N. Saxena, A. Roy, HS Kim, "Energy Efficiency in Wireless Networks: a Composite Review", Taylor and Francis IETE Technical Review, Vol. 32, Issue 2, 2015, pp: 84-93 (SCIE). (Published)
5. [J] F. H. Kumbhar, Sukhdeep Singh, N. Saxena, A. Roy, "Social C-RAN: Novel Futuristic Paradigm for Next Generation Cellular Networks", IETE Tech Review, pp. 1-12, Feb. 2017, DOI: 10.1080/02564602.2016.1276870 (SCIE). (Published)
6. [J] S. Umrao, N. Saxena, A. Roy, Sukhdeep Singh, "Mobile Network Operator and Mobile User Cooperation for Customized D2D Data Services", Springer's Journal of Network and System Management", pp: 1-26, Dec. 2017 (SCIE) (Accepted).
7. [C] Madhan Raj, Sukhdeep Singh, Irlanki Sandeep, Abhishek Roy, Navrati Saxena, "D-TCP: Dynamic TCP Congestion Control Algorithm for Next Generation Mobile Networks", IEEE CCNC 2018, Las Vegas (Accepted).
8. [C] Sukhdeep Singh, Arjun Nanjundappa, Gaurav Jain, "Enhanced Multi-RAT Support for 5G", IEEE CCNC 2018, Las Vegas (Accepted).

## AWARDS & ACHIEVEMENTS

- 2016 superior research award presented by Dean of Electrical & Computer Engineering Dept.
- Awarded full tuition fee waiver scholarship by SKKU, South Korea for bright international student.
- Animations and short video production/direction-Awarded 1st Prize for video production & direction by Dean, College of Info & Comm Engg, SKKU.
- International - 1st runner up for project presentation international technical festival organized by Bits Pilani, India.
- 2nd runner up 'Young Student's Movement' (State/Province Level)
- 3rd prize at tech fest organized by JNU Jaipur for hardware presentations
- 2nd prize at tech fest organized by Thapar University Patiala, India for Project Presentation.
- 1st prize for web-designing at tech fest-AAYAM11' organized by SGVU.

### PROFESSIONAL SERVICE

1. Serving as Guest editor for upcoming special issue "5G Wireless with Cognitive Radio and IoT" in Taylor and Francis IETE Technical Review Journal.
2. Served as TPC for conferences:
  - IEEE-iNIS 2016
  - IEEE-iNIS 2017
  - ACM ICSCE 2017
3. Invited as Guest Lecture to deliver a talk on Model Driven Network Automation at IIT Ropar.

### OTHER ACADEMIC PROJECTS

- B.Tech Major Project - Communication Simulation System
- B.Tech Minor Project - Automation to facilitate safe driving (live model project) Awarded as the 2nd best project by BITS Pilani, India
- Website development projects - Developed 10 website portals for various social organizations, MNCs & research labs. (Links available on request)
- Android application development - Developed an Android application for MUSIC, SKKU, South Korea. (Link available on request)

### POSITION OF RESPONSIBILITIES IN VARIOUS ORG.

OFFICE OF INTERNATIONAL AFFAIRS, SKKU | SKKU INTL. STUDENTS' REPRESENTATIVE

2013 - 2016 | Suwon, South Korea

- Handle the problems of international students at SKKU.
- Organize cultural functions in and outside SKKU.
- Organize technical functions in and outside SKKU.
- Conduct meeting of SKKU office bearers with other universities or government officials.

INDIAN ASSOCIATION, SKKU | PRESIDENT

2013 - 2016 | Suwon, South Korea

- First one to set up full fledged Indian Association at SKKU with more than 80 registered members.
- To build up relations amongst Indians in SKKU.
- To encourage more Indian students in Korea and abroad to join SKKU.
- To assist all the Indians in SKKU.
- To assist new students and tackle their settlement problems.
- Organize cultural events & get together to instill the feeling of 'home away from home'.
- Organized six Indian cultural events.
- The first one to organize the biggest international cultural festival (Indian Festival: Diwali) at SKKU, in which 450 people in and outside our university enjoyed the cultural program. First time in our University some International cultural event was organized with such a large capacity representing India's Unity in diversity. Appreciated on our university's main web page.

HYPHEN: SOCIAL FORUM, SGVU | GENERAL SECRETARY

2010 - 2012 | Jaipur, India

- HYPHEN is a social forum with its main motto to develop the overall personality of the college students specially the one coming from rural background and help them to shape their career.
- Organized mock placement drives.
- Organized invited talks and guest lectures to motivate the students.
- Organized competitions like debate, elocution, essay writing competitions, etc.
- Awarded as the best social forum of SGVU for the academic year 2011-12.

SCHOOL CABINET TEAM, ST. XAVIER'S SR. SEC. SCHOOL | CABINET'S HOUSE REPRESENTATIVE

2004 - 2005 | Bathinda, India

- Organized technical and cultural competitions like project competition, skit competition, singing & dance competitions, school annual day functions & sports meet. [city & state (province) level]

### NON-TECHNICAL INTEREST/ACTIVITIES

- Sports: Swimming-Bronze medal Swimming competition at state (province level).
- Music: Drums, Piano-Played drums for 'AGAAZ' band.
- Dance: Bhangra (Indian dance form)-Recognized for performing Bhangra in:
  - 130 Nations culture Exchange program held at Busan, South Korea.
  - 11th Seoul International Dance Competition organized by UNESCO.
  - Punjabi Night 2016 organized by Seoul National University.
- Travel/Excursion-Traveled China, Thailand, Indonesia, Singapore and Malaysia for excursion.

### MEDIA COVERAGE

- Interview published in one of the prestigious newspaper of Korea 'The Korea Herald'.
- Featured in the SKK university, Korea web magazine.
- Personal Interview published on main SKKU web page. Interview got the highest number of hits in SKKU history.

### SKILLS

PROGRAMMING

C • C++ • HTML • CSS • PHP • JAVA Script • MySQL

TOOLS

OMNET++ • NS2 • Oracle Primavera P6 (Online & Offline) • Adobe Dreamweaver CS5 • Adobe Flash CS5 Professional • Wamp Server 2.1 • WORDPRESS (Server version tool)

CERTIFICATION

CCNA (Appreciation certificate by CISCO academy, USA)

- Module1 - 88%
- Module2 - 86.1%
- Module3 - 87.5%
- Module4 - 88%