



Krishna Sirohi

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BRIEF PROFILE:

Krishna Sirohi is Professor of Practice at Bharti School of Telecommunication of IIT Delhi and contributing towards setting up new dimension of Academia - Industry Collaboration for cutting edge Research Translation and the development of field-testable deep-tech solution aiming to meet emerging national needs.

Prior joining to IIT Delhi (in Feb 2021), Krishna has long experience (33 Years) of Research & Development in the field of Telecommunication (wireline & wireless) & Defence communication products design.

He has earlier contributed to major indigenous [R&D projects](#) of national importance.

CURRENT RESEARCH & DEVELOPMENT ACTIVITIES

- Ongoing [R&D Activities](#) at Bharti School

MAJOR FUNDED RESEARCH/IMPLEMENTATION PROJECTS

- "Indian Open Source Software Platform for an end-to-end 5G Networks (IOS-5GN)" : a joint project between IIT Delhi, IISc and CDAC-Trivandrum, with initial seed fund of Rs 20 Cr from MEITY
- Few other R&D projects are expected to start soon

OPPORTUNITIES:

There are multiple opportunities to be associated in advanced communication research, design, implementation, product/ PoC Realization and technical leadership role in :

- "Indian Open Source Software Platform for an end-to-end 5G Networks (IOS-5GN)" project
- other funded research product, and
- associated Startups.

CALL FOR ASSOCIATION:

- Call for industry and individual deep-tech experts to meet the major goals collaboratively
- [Check](#) your interest for joining/ collaborating opportunity

MAJOR R&D PROJECTS (PAST)

- 1) India's first indigenous Large Capacity Digital Switch at Indian Telephone Industries Limited (ITI) [1988-1991]
- 2) India's first indigenous Command, Control, Communication & Intelligence (C3I) for Indian Navy Warfare Ship at Bharat Electronics Limited [1991-1995]
- 3) Established and headed Mobile Technology development division in C-DOT[1995-2004]
- 4) Established (as CTO, VNL) India's first Mobile telecom R&D & Successful Manufacture [2004-2011]
- 5) Guided complex product development initiatives in the field of network monitoring and cyber security, 4G Mobile infrastructure, E-Band Terrestrial communication products and 5G-Standardization [2011-2021]

BRIEF PROFILE:

R&D AT BHARTI SCHOOL:

- 1) End-to-End 5G Test Network facility
 - a. Based on Open-Source 5G Software and COTS Hardware
 - b. Architecture Design, Implementation, Code, Code-organisation, deployment knowhow of entire '5G & Beyond' Network infrastructure (Core & Radio Network) and User Equipment (UE & IOT Gateway)
 - c. Adequately hardened for continuous operational stability and required capacity
 - d. Platform to experimental learning of various aspects of the mobile end-to-end network and wireless communication
- 2) Open platform for experimental verification of advanced research and standardisation for 6G
 - a. Research, Development and field testable implementation of beyond 5G wireless communication techniques for strategic applications
- 3) Centre of Excellence for '5G and Beyond' use-case development for various industry segment applications
- 4) Proof of concepts of advanced solutions leveraging cutting-edge research translation and the field testable prototypes for meeting emerging national needs 'ahead of state-of-art' based on advanced mobile-wireless technology networks and industry 4.0/5.0 solutions
- 5) Nurturing deep-tech 5G/6G Technology Startups and building dependable ecosystem of delivering advanced research based globally competitive deployable solutions leveraging effective collaboration of research team at IIT Delhi, its incubated Startups and the R&D collaborators
- 6) Besides 5G/6G Research for enhancing network capability, following 5G/6G Use-cases are being targeted for impactful deployment:
 - a. 5G/6G Enabled Advanced Rural Healthcare
 - b. Advanced IOT Systems (Energy sustainable, OneM2M compliant, Realtime Critical Control and Time Synchronous wireless Networking) solution for Industry 4.0 Application
 - c. 5G/6G Enabled Strategic Communication Solution
 - d. Advanced V2X solutions for enhanced road safety

CURRENT RESEARCH & DEVELOPMENT ACTIVITIES

JOINING/ COLLABORATING OPPORTUNITIES:

WHO SHOULD CONSIDER JOINING US?

- 1) Domestic and International R&D organizations who are keen to associate with us on ongoing advanced research based implementation project as R&D Collaborator
- 2) Individual senior experts exploring opportunities to exploit their deep technology development skills in order to meet challenging requirement of research and implementation of solutions 'ahead of state-of-art' and of national importance and can also meet the expectations of global south development
- 3) Implementation hands-on experts who are willing to take team building and delivery responsibility of advanced system development in collaboration with ongoing research team in a very different academic environment of IIT Delhi
- 4) ***Individual design and implementation experts who are looking for pursuing Research (PhD or MS Research) from IIT Delhi and at the same time continue working on challenging project assignments***
- 5) Individual design and implementation experts who wants to prepare themselves for innovative product evolution and willing to transform themselves as deep-tech entrepreneur by joining IIT Delhi's start-up and innovation ecosystem marching to achieving high societal impact
- 6) Individuals/team willing to contribute to ongoing advanced research team and help them in research translation by evolving innovative solution architecture design and implementing it with a proof of concept
- 7) Individual/ company having significant expertise in productization, conducting field trials with user agencies and help our start-up ecosystem to get ready for the mass manufacturing/supply by achieving required product maturity and its certification
- 8) Researchers (students/faculty) willing take their theoretical research to the next level of experimental verification and implementing to create basic Minimum Viable Product (MVP) or or field testable PoC
- 9) Researchers who are evolving a research proposal with sizable experimental verification part and looking for implementation platform and support necessary to substantiate their experimental research proposal
- 10) MS Research/ M.Tech/ B.Tech (final year) students who want to do substantial experimental work as mandatory part of their research/curriculum project in the field of 5G/6G technology space and aspire to prepare themselves as experienced design engineer capable of taking independent design assignments
- 11) Individuals design/implementation engineers with expertise/ good familiarity in some of these fields:
 - a. FPGA Design, Wireless technology L1, L2 implementation
 - b. Embedded System Design/ Implementation/ Debugging skills
 - c. Large sized real-time system design
 - d. Performance optimization in multi-threaded Realtime Operating System environment
 - e. Good understanding of computing system architecture, algorithms & data structures, Operating Systems, Efficient programming techniques, Computer networks (topology, algorithms and protocols)
 - f. Knowledge on system design aspects of IOT systems/ OneM2M standards/ Remote management systems of IOT devices
 - g. Experience in development of 4G/5G Radio or Core Network elements
 - h. 5G Opensource design, code & implementation, performance- stability and feature enhancement of 4G/5G Network elements,
 - i. Hands-on knowledge on programming language (C/C++,Python), MATLAB and operating systems (Linux Open Source)
 - j. Implementation of Data networks Quality of Service and Service Base Architecture
 - k. Aptitude to learn product development life-cycle, software engineering and quality processes.
 - l. Strong intention to become design engineer capable of solving complex design problems, be self-starter, good analytical ability, fine Inter-personal skills, accountable and committed, entrepreneurship mindset, project delivery- focused and willingness to learn on fresh avenues.
- 12) Senior individual experts willing to take leadership design role with:
 - a. Established credentials in designing and implementing software of 3GPP compliant RAN/CN/UE SW Features or Modules of 4G/5G network products
 - b. Established experience of designing, implementing, enhancing and debugging of other (non-3GPP) wireless/communication systems
 - c. Strong intention and capability of understanding existing design, code and make necessary enhancements for adding new functionality, enhancing performance and improve capacity and operational stability of the system
 - d. Experience with the software engineering and quality processes

[OPEN FOR ASSOCIATION:](#)