

Deepak Nadig Anantha

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Education

UNIVERSITY OF NEBRASKA-LINCOLN

Nebraska, USA

2ND YEAR PH.D IN COMPUTER ENGINEERING (GPA: 3.71/4.0)

Aug. 2015 - PRESENT

- Research Focus: **Cybersecurity, Software Defined Networks**. Adviser: **DR. BYRAV RAMAMURTHY**

VISVESVARAYA TECHNOLOGICAL UNIVERSITY (R.V. College of Engineering)

Karnataka, INDIA

M.TECH. IN DIGITAL COMMUNICATION ENGINEERING (FIRST CLASS WITH DISTINCTION)

2005 - 2007

- Thesis: “*Design & Deployment of DTN Architectures/Protocols for Interplanetary Communication Systems*”, Adviser: Dr. A.G Ananth

VISVESVARAYA TECHNOLOGICAL UNIVERSITY (Kalpataru Institute of Technology)

Karnataka, INDIA

B.E. IN ELECTRONICS AND COMMUNICATION ENGINEERING (FIRST CLASS)

2000 - 2004

- Thesis: “*Digital Image Watermarking using Double Phase Encoding*”, Adviser: Prof. G.D Gurumurthy

Research Interests

- SDN & NFV; Cybersecurity, Service Composition/Chaining.

Experience

University of Nebraska-Lincoln, USA

Lincoln, NE, USA

RESEARCH ASSISTANT, DEPT. OF COMPUTER SCIENCE & ENGINEERING

Jan 2016 - Present

- Currently working on NSF-Funded Project on *Innovating Network Cyberinfrastructure through Openflow and Content Centric Networking in Nebraska*

University of Nebraska-Lincoln, USA

Lincoln, NE, USA

GRADUATE TEACHING ASSISTANT, DEPT. OF COMPUTER SCIENCE & ENGINEERING

Aug 2015 - Dec 2015

- Involved in the assessment process; provided effective, timely, & appropriate feedback to students to support their learning.

SOLUTT Corporation

Bangalore, INDIA

DIRECTOR, TECHNOLOGY & RESEARCH

Jan 2010 - Aug 2015

- Instrumental in heading Networking/Wireless Operations at SOLUTT.
- Worked on multiple projects focusing on PHY/MAC layer Design, Performance Analysis, and Evaluation for systems like LTE, LTE-A, cdma2000, and IEEE 802.11 Multigigabit technologies.
- Experience in Evaluation of Antenna/RF Systems, Channel Models (incl. WINNER, SCM, 802.11TGn) and Traffic Engineering.
- Trained over 600 Engineers in Network Design, LTE & LTE-A, UMTS, IEEE 802.11 & 16, and cdma2000 1x/EVDO.
- Actively engaged in Design, Development and Delivery of Advanced Training Programs, Workshops and Seminars in the areas of Networking, Wireless System Design, NGN Architectures, and Protocol Engineering.
- Established Learning Management Frameworks and E-Learning Platforms for delivery of online content, deploying secure real-time assessments, feedback and analytics to create the SOLUTT Virtual Learning Environment.

Cambridge Institute of Technology

Bangalore, INDIA.

VISITING FACULTY

Aug - Dec 2011

- Taught Graduate Courses in Computer Science. Initiated a Project on Development of Opportunistic Grids for HPC.

B.M.S. Institute of Technology

Bangalore, INDIA.

FACULTY OF ENGINEERING

Jan - Dec 2009

- Taught Undergraduate Courses in Communication Engineering.
- Actively involved with FOSS/LUG to promote Open Source Software for Solving Engineering Problems.

R.V. College of Engineering

Bangalore, INDIA.

FACULTY OF ENGINEERING

Aug 2007 - Jun 2008

- Taught Graduate & Undergraduate Courses in Telecommunications Engineering.

Indian Space Research Organization (ISRO), Satellite Center (ISAC)

Bangalore, INDIA.

RESEARCH INTERN

Aug 2006 - Jun 2007

- Worked on Design/Development of Architectures, Protocols & Testbeds for Interplanetary Communication Systems at the Digital Systems Group of Telecommand Division.

R.V. College of Engineering

Bangalore, INDIA.

RESEARCH ASSOCIATE (DEPT. OF ELECTRONICS & COMMUNICATION ENGINEERING)

May - Jul 2006

- Worked on Simulink Modeling and Simulation of a High Performance Fighter Aircraft.

Professional Certification

IEEE WCP®

IEEE ComSoc, USA

IEEE CERTIFIED WIRELESS COMMUNICATIONS PROFESSIONAL

May 2014 - PRESENT

- Demonstrated expertise in Wireless Access Technologies; Network & Service Architectures; RF & Antenna Engineering; Standards, Policies & Regulations.

Skills

Programming	Python, Java, Bash
Stacks	OpenStack, OSGi, InfluxDB/Grafana
Software-Defined Networks	OpenFlow, ONOS, POX, P4, Open vSwitch
Emulation/Simulation	Mininet, LXC, ns3, OPNET, Matlab/Simulink
Network Testbeds	DETERLab, GENI, CloudLab
SCM/DevOps	Git, Mercurial, Vagrant, Puppet
Agile Methodologies	Scrum, Kanban
Other	Wireshark, IPTables, VTun, GnuPlot, \LaTeX

Publications

SELECTED CONFERENCE PROCEEDINGS

1. "SNAG: SDN-managed Network Architecture for GridFTP Transfers", Proceedings of the Third Workshop on Innovating the Network for Data-Intensive Science, INDIS '16, 2016.
2. "Development of Long Term Evolution (LTE) Testbed for Evaluation of Femto/Macro Cell Systems", Proceedings of International Conference on Electronics and Communication Engineering, Bangalore, INDIA, Apr 2013.
3. "Radio Propagation Models for Coverage Analysis and Planning of Wireless MANs", Proceedings of International Conference on Electronics and Communication Engineering, Bangalore, INDIA, Apr 2013.
4. "On the MAC Layer Jamming Techniques for IEEE 802.11e based Wireless Ad-hoc Networks", Proceedings of the International Conference on Computer Modeling and Simulation (ICCMS 2011), Mumbai, INDIA Jan 7 - 9th, 2011.
5. "Performance Analysis and Evaluation of Delay-Tolerant Network Bundling Protocol on a Scalable Virtual Network Test Platform", Proceedings of the IET International Conference on Wireless, Mobile and Multimedia Networks, Jan 2008.
6. "On the Characterization, Evaluation and Analysis of Performance of Delay-Tolerant Networks", Proceedings of the International Conference on Embedded Systems, Mobile Communication and Computing (ICEMC2), Aug 2007.

MASTER'S THESIS

1. "Design and Deployment of DTN Architectures and Protocols for Interplanetary Communication Systems", Master's Thesis, RV College of Engineering, Visveswaraya Technological University, Jul 2007.

TECHNICAL REPORTS

1. "A Study of Jamming in IEEE 802.11e Networks", Technical Report, Dept. of Electrical Computer Engineering, North Carolina State University, Raleigh, USA, Dec 2008
2. "Simulation and Analysis of Intersystem Handovers in Mobile WiMax Networks", Technical Report, Dept. of Electrical Computer Engineering, North Carolina State University, Raleigh, USA, Dec 2008

Professional Associations

- IEEE, IEEE ComSoc & IEEE SDN Community, MEMBER (2011 - PRESENT)
- IEEE Bangalore Section, Member of IEEE GOLD SIG EXE-COM Professional Activities Group (2011 - 2014)

Recent Projects

- **Software Defined Security and Service Composition through Service Function Chaining**
Platforms: **OpenStack, ONOS, Open vSwitch**. Integrated SDN with a service function chaining (SFC) infrastructure that provides virtual network functions (VNFs) for secure handling and monitoring of incoming traffic.
- **Protocol Independent Forwarding in Software Defined Networks**
Platforms: **P4, Open vSwitch, GENI**. Developed a protocol independent packet processor using P4 to evaluate available switching targets, parsers and flow control behaviors.
- **Multi-layer SDN Control of Packet/Optical Networks**
Platforms: **ONOS, LINC-OE**. Used LINC-OE to create optical topologies to study flow configuration behavior in optical WDM networks with ROADMs and packet IP switches. Demonstrated a converged packet/optical architecture to study optical link failure recovery.
- **Innovating Network Cyberinfrastructure through Openflow and Content Centric Networking**
Funding Agency: **National Science Foundation (NSF), CC*DNI Program**.
Platforms: **Python/Java, ONOS, GENI, Bro IDS**.
Working on the deployment of a SDN production network to manage resources and provide scalable network security by using a OpenFlow policy-based security management framework. Development of a suitable content centric networking (CCN) solution for efficiently handling high-priority, high-volume data transfer from the compact muon solenoid (CMS) experiment.
- **Evaluation of SDN Controller Redundancy Architectures**
Platforms: **Java, ONOS, OpenDayLight, Mininet**. Evaluated the performance of SDN cluster controller architectures to investigate the security implications of controller failures.

Scholarship & Awards

2016	Graduate Research Assistantship , Jan 2016 to present, Dept. of CSE, University of Nebraska-Lincoln.	Nebraska, USA
2016	GENI/GEC24 Travel Grant Recipient , Mar 8,9 2016, Arizona State University, Tempe.	Arizona, USA
2015	Graduate Teaching Assistantship , Aug - Dec 2015, Dept. of CSE, University of Nebraska-Lincoln.	Nebraska, USA
2007	Certificate of Merit , Ranked 1/18 in the Master's Program, RV College of Engineering.	Bangalore, INDIA
2007	Excellence Certificate , For work done as a Research Intern at Indian Space Research Organization.	Bangalore, INDIA
2005	Best Student Paper Award , Emerging Trends in Wireless Networks, 14th Annual Symposium, IEEE Bangalore Section.	Bangalore, INDIA
2003	Best Student Paper Award , KSHITIJ' 2003 – National Symposium, IEEE Student Branch, BEC.	Karnataka, INDIA
2003	Best Student Paper Award , SYRITZ™ – A National Level Symposium, NICE.	TamilNadu, INDIA
2003	Best Student Paper Award , ISTE Student Chapter – A State Level Symposium, KIT.	Karnataka, INDIA

Professional Activities

SERVICE

2016	Reviewer , IEEE INFOCOM 2017	IEEE, USA
2016	Reviewer , 37th IEEE Sarnoff Symposium 2016	IEEE, USA
Jun 2015	Board of Studies Member , 8th Meeting of the Board of Studies (BOS) in Electronics and Communication, SJ College of Engineering	Mysore, INDIA
Nov 2011	Served on Peer Review Committee , 2011 3rd International Conference on Computer Technology and Development	Chengdu, CHINA
Mar 2011	Served on Peer Review Committee , 2011 3rd International Symposia in Advance Computing (ISAC 2011)	Lucknow, INDIA
2007 - 2008	Committee Member , Entrepreneurship Development Cell (EDC), RV College of Engineering	Bangalore, INDIA

INVITED TALKS

8 May 2015	Keynote Address, Convocation & Student Forum, VISHIST-15 , Sambhram Inst. of Technology	Bangalore, INDIA
28 Mar 2015	Network Simulation and Modeling , Dept. of ECE, SJ College of Engineering	Mysore, INDIA
28 Oct 2015	Tools for Data Science and Analysis , Dept. of Computer Applications, PES Institute of Technology	Bangalore, INDIA
17 Oct 2014	SDN: Trends in Programmable Networks , Dept. of ECE, Sapthagiri College of Engineering	Bangalore, INDIA
27 Jan - 1 Feb, 2014	Antennas for Next-Generation Network Mobile Radios , Antenna Technologies, Faculty Development Program, TEQIP II, Dept. of ECE, BMS College of Engineering	Bangalore, INDIA

17 Aug 2013	Simulation of Computer Networks and Systems , Dept. of MCA, CMR Institute of Technology	<i>Bangalore, INDIA</i>
19 Jul 2013	Next Generation Networks: Simulation & Modeling Perspectives , Seminar on Understanding Wireless Communication Technologies: 3G, 4G/LTE, WiMAX; Dept. of ISE, PES Inst. of Technology	<i>Bangalore, INDIA</i>
27-28 Apr 2012	LATEX for Mathematical Publishing , Faculty of Mathematics and Statistics, Christ University	<i>Bangalore, INDIA</i>
12 Apr 2012	The Future is Open: OSS in Technology , KRITANSH Forum, Dept. of MCA, Cambridge Institute	<i>Bangalore, INDIA</i>
22 Oct 2011	Wireless Network Architectures: Evolution & Directions , Dept. of ECE, BMS Inst. of Technology	<i>Bangalore, INDIA</i>
01 Oct 2011	Wireless Communication Engineering Technologies , IEEE Student Branch, Dr. Ambedkar Inst.	<i>Bangalore, INDIA</i>
23 Dec 2010	Mathematical Modeling of Large Scale Random Networks , National Conference on Recent Trends in Network Security & Cryptography, Dept. of MCA, PES Institute of Technology	<i>Bangalore, INDIA</i>

INVITED SEMINARS

2-4 Jul 2015	Workshop on ns3 Network Simulator , Dept. of Computer Applications, RV College of Engineering	<i>Bangalore, INDIA</i>
1-5 Jun 2015	Workshop on Network Simulation using ns3 , Dept. of CSE, Nitte Meenakshi Institute of Tech	<i>Bangalore, INDIA</i>
15 Feb 2015	Workshop on Next-Generation Network Simulation using ns3 , Amrita Vishwa Vidyapeetham	<i>Bangalore, INDIA</i>
6-7 Feb 2015	Workshop on ns3 and Computer Networks , Dept. of ECE, Sri Venkateshwara College of Engg.	<i>Bangalore, INDIA</i>
1-4 Dec 2014	Faculty Development Programme on ns3 , Dept. of ECE, Sri Venkateshwara College of Engg.	<i>Bangalore, INDIA</i>
28 Oct 2014	Workshop on Tools for Data Science and Analysis , Dept. of MCA, PES Institute of Technology	<i>Bangalore, INDIA</i>
26-27 Sep 2014	Workshop on Computer Network Laboratory , Dept. of MCA, Bangalore Institute of Technology	<i>Bangalore, INDIA</i>
2-3 Aug 2014	National Workshop on NS3 Simulation , Dept. of CSE, Amrita School of Engg, Amrita University	<i>Bangalore, INDIA</i>
27-28 Jun 2014	Workshop on Network Simulation , Dept. of MCA, CMR Institute of Technology	<i>Bangalore, INDIA</i>
12-13 Nov 2013	NGN Simulation Tools & Frameworks , TEQIP Phase II, Dept. of ISE, Dr. Ambedkar Inst. of Tech.	<i>Bangalore, INDIA</i>
31 Jul 2012	Network Simulations & Modeling using ns2 , Dept. of CSE, C Byregowda Institute of Technology	<i>Kolar, INDIA</i>
5-6 Aug 2011	Computer Network Simulation , Dept. of MCA, Cambridge Institute of Technology	<i>Bangalore, INDIA</i>
17-19 Mar, 2011	Network Simulation: Principles & Practice , Dept. of ECE, BMS College of Engineering	<i>Bangalore, INDIA</i>
14-16 Mar 2011	RF & Wireless System Design , IEEE Student Branch, Sambhram Institute of Technology	<i>Bangalore, INDIA</i>
5-8 Oct, 2010	RF & Wireless System Design , IEEE Student Branch, Sambhram Institute of Technology	<i>Bangalore, INDIA</i>
9-10 Aug 2010	Network Simulation using NS2 , Dept. of ISE, PES Institute of Technology	<i>Bangalore, INDIA</i>

References available upon request.