Seema Kumar

Curriculum Vitae

+49 17635626293
seemakumar8@gmail.com
www.linkedin.com/seemakumar

Research Interests

Security in IoT, cryptography, distributed systems, IoT communication protocols, embedded device integrity verification, blockchains suitable for IoT devices

Education

Oct 2013 - Jan 2016 **Master of Science**, *Distributed Software Systems, Technical University of Darmstadt*,
Relevant Courses: Wireless Sensor Networks (WSN), WSN lab with embedded programming, Computer Networks, Network Security, Distributed Systems,
Master Thesis: Integration of Topology Control and Network Coding for Wireless Multihop Networks.
Grade: 1.87 ECTS (3.7/4 GPA)

2006–2009 **Bachelor of Engineering**, *Computer Science*, Visveswaraya Technological University, *Grade: 76% (First Class with Distinction)*.

Professional Experience

Jan 2017– till date **Research Assistant (Wissenschaftlicher Mitarbeiterin)**, TU Darmstadt.
Ph.D student at Distributed Systems Programming group (headed by Prof. Dr. Patrick Eugster)

Oct 2016 – Jan 2017 **Research Assistant**, Singapore University of Technology and Design, Singapore.
Worked on detection mechanism for IoT malware (Mirai)

March 2016 – August 2016 **Intern**, Indian Institute of Science, India.
Developed a distributed scheduling algorithm for 6TiSCH networks. Worked on IoT communication protocols: RPL, 6LoWPAN, 6TiSCH

Jan 2013 – August 2013 **Software Engineer**, Savari Networks, India.
Developed safety application for Vehicle to Vehicle (V2V) and Vehicle to Infrstructure (V2I) communications. Embedded programming on an operating system based on OpenWRT

Dec 2009 – August 2012 **Project Assistant**, Indian Institute of Science, India.
Design and development of a fuzzy logic algorithm for seamless vertical handover across 3G and WLAN
6PANview - Worked on analyzing network performance based on link quality between the nodes

HiWi/Werkstudent

Aug 2015 – Dec 2015 **Werkstudent**, AGT International, Darmstadt.
Setting up an IoT network which can remotely fetch machinery data - used Raspberry Pi. A Prototype for Indoor Localization using bluetooth beacons

Jan 2014 – July 2014 **HiWi**, Technical University of Darmstadt, Darmstadt.
Fine-grained churn modeling for TUDµNet, a WSN testbed. Users can achieve the scenario of single or multiple simultaneous node failures and evaluate the behavior of their system

Technical Skills

Languages	C, Python, Java
Development	Linux, Contiki (OS for embedded devices)
Protocols	IEEE802.11, IEEE802.15.4, UDP/TCP, IPv6, RPL, TSCH
Software	MATLAB, Wireshark

Languages

English	**Proficient**	
German	**Level B1**	*Basic*

Publications

G Baba Prasad, K Seema, UH Shrikant, Gopi Garge, SVR Anand, and Malati Hegde. Seamo+: A virtual real-time multimedia service framework on handhelds to enable remote real-time patient monitoring for mobile doctors. In *IEEE International Conference on Communication Systems and Networks (COMSNETS)*, 2013.

K Seema, Gopi Krishna Garge, SVR Anand, and Malati Hegde. Experiences with seamo: a vertical handoff implementation for heterogeneous wireless networks. *Proceedings of the Asia-Pacific Advanced Network*, 2011.

Mohammad Rafiq, Seema Kumar, Nagaraj Kammar, Guru Prasad, Gopi Krishna Garge, SVR Anand, and Malati Hegde. A vertical handoff decision scheme for end-to-end qos in heterogeneous networks: An implementation on a mobile ip testbed. In *IEEE National Conference on Communications (NCC)*, 2011.