

SANDEEP S. KUMAR PhD CISSP CIPT

Address: Eindhoven, The Netherlands
Email: contact [at] sandeep [dot] de

PROFESSIONAL PROFILE

- Internationally recognized expert in the field of applied information and network security with over 15+ years of professional experience.
 - Certified Information Systems Security Professional (CISSP) from ISC² and Certified Information Privacy Technologists (CIPT) from IAPP.
 - Exceptional problem-solver with keen ability to identify and resolve cybersecurity risks within the product and business constraints.
 - Team leader with capability to create close working relationships with multiple stakeholders.
 - Numerous patents and peer-reviewed academic publications.
 - Collaboration with universities and other research organizations internationally.
-

AREAS OF EXPERTISE

- IoT Security
 - Cryptography
 - Security risk assessment & mitigation
 - Security standards and regulations
 - Network security
 - Authentication and access control
 - Secure development processes
 - Embedded security design
-

PROFESSIONAL EXPERIENCE

Apr 2018 – present

Director, R&D Group Manager IoT Security, Signify Research Eindhoven

The IoT Security group is a central competence team working closely with Signify's consumer and professional business units to:

- Guide and support the development of secure connected lighting systems like Hue, Interact and LiFi.
 - Contribute and drive security topics in multiple external IoT standards and regulations like Zigbee, BLE, IETF, CHIP and CEN/CENELEC that is relevant for Lighting industry.
 - Tests and validate security of Signify's connected products with a focus on Zigbee and BLE.
 - Identify mitigations as part of security incident response.
 - Support the creation of internal security processes, procedures and guidelines.
 - External knowledge networking with academia on longer term IoT security research topics e.g. INTERSECT.
 - Internal knowledge sharing and security trainings through Security Special Interest Group (SIG).
-

SANDEEP KUMAR

Dec 2006 – March 2018

Senior Scientist, Philips + Signify Research Europe

- Security project leader and internal subject matter expert for multiple businesses.
- Design secure architectures for multiple IP based lighting control systems both in the consumer and professional domain.
- Security standardization of network security protocols for the Internet-of-Things applications in IETF, Thread and Fairhair.
- Development of technologies for anti-counterfeiting of electronic devices based on Physically Unclonable Functions (PUF). Lead to the Intrinsic-ID spinoff.

2002 – 2006

Researcher,

Embedded Security Group, Ruhr-University-Bochum, Germany.

- Efficient Elliptic Curve Cryptography (ECC) implementation for sensor networks.
 - Industrial projects for design of constrained environment crypto-systems with Sun Microsystems, California, USA and Infineon Technologies, Munich, Germany
-

EDUCATIONAL QUALIFICATIONS

2002 – 2006

Ph.D. in Electrical Engineering and Information Sciences

Ruhr-University Bochum, Bochum, Germany.

Thesis: "*Elliptic Curve Cryptography for Constrained Devices*"

Supervisor: Prof. Christof Paar

1997 – 2002

Bachelor and Master of Technology, Electrical & Communication Engineering

Indian Institute of Technology (IIT)-Bombay, Mumbai, India.

Specialization in Cryptography

Thesis: "*Crypto Accelerator for IP Security on ARM core*"

BOOK & SELECTED PUBLICATIONS

- Sandeep S. Kumar, "*Elliptic Curve Cryptography for Constrained Devices: Algorithms, Architectures, and Practical Implementations*", ISBN:3639068599, 2008.
 - RFC 7744, "*Use Cases for Authentication and Authorization in Constrained Environments*", Internet Engineering Task Force (IETF), 2016.
 - RFC 8576, "*Internet of Things (IoT) Security: State of the Art and Challenges*", Internet Research Task Force (IRTF), 2019.
-