

# **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 security with over 15+ years of professional experience.
  - People management skill to lead a high-performing team and stakeholder management to create close working relationships.
  - Exceptional problem-solver with keen ability to identify and resolve cybersecurity risks within the product and business constraints.
  - Certified Information Systems Security Professional (CISSP) from ISC<sup>2</sup> and Certified Information Privacy Technologists (CIPT) from IAPP.
  - 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
  - System and 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.
-