General information

University of Surrey, UK

Professor Liqun Chen

liqun.chen@surrey.ac.uk

+44 7814 752 577

Area of interest	Choose Y or N
o Functional encryption and reduction of leakage (e.g., anonymization or obfuscation)	Y
o Ultra-lightweight cryptology and ultra-high-speed cryptographic algorithms including quantum cryptography	Y
o Physical cryptanalysis, including tampering, side channel, faults injection attacks, and security of tools for good software implementation and validation practices	Y
o Authenticated encrypted token research for mobile payment solution	Y
o Innovative cryptographic primitives and complementary non-cryptographic privacy-preserving mechanisms to enforce privacy	Y
o New techniques, such as quantum safe cryptography, which are secure from quantum computers	Y
o Quantum key distribution	N
o Automated proof techniques for cryptographic protocols	Y

Competencies

- *Surrey Centre for Cyber Security works together with*
  - 5G Innovation Centre, Surrey Space Centre, Centre for Digital Economy, Centre for Vision, Speech & Signal Processing, Department of Sociology, School of Law and School of Psychology

- *Involved in a number of EU FP7 projects, e.g.*
  - SENSEI (support for security, privacy and trust in sensor and actuator networks) 2007-2010
  - EXALTED (scalability and security for LTE networks) 2010-2013
  - Cybersecurity on SCADA: risk prediction, analysis and reaction tools for Critical Infrastructures, 2012-2014

- *We can bring the skills of*
  - **Cryptography**, including functional encryption and quantum safe cryptography
  - **Hardware security**, such as crypto algorithms in Trusted Platform Modules
  - **Formal verification** for code, design and protocols
  - Security in **mobile communications** and **IoT**
  - **Privacy** enhancing technologies
  - **Trust**, identity management, authentication and access control
  - **Human-centred security**, e.g., e-voting and distributed ledger technology
  - **Digital forensics** and security engineering
  - **Cloud security** and **big data analysis**