Research Interests

* Asynchronous Circuit
* Physical Hardware Attack
* Hardware Assurance
* Machine Learning
* Class-D Amplifier
* DC-DC Converter

Research Projects

* Cyber-Hardware Forensics & Assurance Evaluation R&D Programme (Project PI, 2019 – 2024)
* National Integrated Centre for Evaluation, (Project PI, 2019 – 2022)
* SOCure: Assuring Hardware Security by Design in Systems on Chip (Project PI, 2019 – 2024)
* Hardware Assurance Phase II (Project PI, 2017 – 2022)
* Side-Channel-Attack-Resistant (SCA-Resistant) Nano AES-128 Accelerator for Internet-Of-Thing (IoT) (Co-PI, 2018 – 2022)
* Secured Memories and Anti-tamper Mechanisms (PI, 2015 – 2019)
* Secured Asynchronous-Logic Network-on-Chip Architecture (PI, 2014 – 2017)
* Hardware Assurance (Project PI, 2013 – 2017)
* ASIC Failure Analysis - Development of a Hierarchy Extractor (Project PI, 2009 – 2013)
* Fundamental Research: Ultra-Low Power Sub-Threshold Digital Circuits and Systems (PI, 2009 – 2012)
* RFCMOS ASICs for Comm System and High Speed MUXDAC (Co-PI, 2010 -2012)
* Digital Asynchronous-Logic: Dynamic Voltage Control (DARPA Co-PI, 2009 -2010)
* A Hierarchy Extractor (PI, 2008 – 2009)
* Development of Asynchronous-Logic EDA Tools and a High Performance Asynchronous Digital Signal Processor (PI, 2006 – 2009)
* Digital Amplifier (PI, 2006 – 2009)
* Low Power Asynchronous Design (PI, 2006 – 2008)
* Signal Processing and Enablers based on Asynchronous Digital Logic (PI, 2006 – 2007)
* Low Power Asynchronous Digital Signal Processor IC Design, NTU- Linköping (Co-PI, 2005 – 2008)
* Digital Amplifiers, NTU-Panasonic (Co-PI, 2005 – 2007)
* Synchronous & Asynchronous Circuit Design (PI, 2004 – 2007)
* Collaborative Synchronous and Asynchronous Circuit Design, ASEAN-EU University Network Programme (AUNP) (PI, 2003 – 2005)
* Development of Electrical, Electronic and Information System (PI, 2003 – 2006)
* Digital Multiplier with Reduced Spurious Switching (PI, 2002 – 2006)
* Micropower Low Voltage Asynchronous Logic DSPs (PI, 2000 – 2004)