

SAHAN SANJAYA

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Research Interests: Hardware Security, RTL Design, VLSI, Digital Electronics, Embedded Systems, IoT, Physics

EDUCATION

University of Florida

Ph.D. in Computer Science

- Advisor: [Prof. Prabhat Mishra](#)

Gainesville, FL, USA

Jan 2023 - Ongoing

University of Moratuwa

B.Sc. Engineering(Hons) in Electronic and Telecommunication Engineering

- CGPA: 3.98/4.2
- Dean's List: Semester 1, 2, 3, 4, 6, 7, 8

Sri Lanka

Aug 2017 - May 2022

Kegalu Vidyalaya, Kegalle

G.C.E Advanced Level Examination

- Z-Score : 2.7262
- Island Rank : 17

Sri Lanka

2016

EXPERIENCE

Research Assistant (Full-time)

Embedded Systems Lab, University of Florida

- Researched on Pre-Silicon assertions and Post-Silicon hardware checkers

Jan 2023 - Ongoing

Gainesville, FL, USA

Research and Development Engineer - 1 (Full-time)

Synopsys Lanka (Pvt) Ltd

- Developed hardware prototypes using Synopsys's Virtualizer Studio platform.
- Used SystemC TLM (Transaction-level Modeling) to develop models.

May 2022 - Nov 2022

Colombo, Sri Lanka

Visiting Instructor

University of Moratuwa

- Visiting instructor for In19 EN1802 Basic Electronics module practicals.
- Visiting instructor for In20 EN1094 Laboratory Practice I - Electronics module.

May 2022 - October 2022

Moratuwa, Sri Lanka

Firmware Development Engineer (Part-time)

Elxtrone (Pvt) Ltd

- Developed ACI / PMS motor controlling firmware covering functional and safety requirements.
- Used TI tms320f28388d control card and TMDXIDDK379D development kit for the development.
- Developed the Modbus TCP/IP communication firmware for motor controller.
- Did functional and safety testing of the motor controller.
- Used Code Composer Studio and Sensor Controller Studio for the firmware development.

Apr 2021 - Dec 2021

Kadawatha, Sri Lanka

Firmware Development Engineer (Trainee)

Excel Tech Consulting (Pvt) Ltd

- Developed a BLE enable medical chair firmware.
- Used TI CC2640R2F Launchpad for prototype development.
- Did quality assurance testing of the medical chair.
- Learnt about motor controlling and power electronics.

Oct 2020 - Apr 2021

Kadawatha, Sri Lanka

PUBLICATIONS

1. Hasini Witharana, Sahan Sanjaya and Prabhat Mishra, **Dynamic Refinement of Hardware Assertion Checkers**, *Design Automation and Test in Europe (DATE)*, Antwerp, Belgium, April 17-19, 2023.

PATENTS AND COPYRIGHTS

1. Prabhat Mishra, Hasini Witharana and Sahan Sanjaya, **Dynamic Refinement of Hardware Assertion Checkers**, *U.S. Utility Patent Application Serial No. 63/489,020*, filed March 8, 2023. (pending)

PROJECTS

- Configurable AES cryptographic module (RTL model) for XTS mode** Oct 2022
- Developed a configurable AES cryptographic module (RTL model) for XTS mode for different key sizes.
 - Performed synthesis as well as simulation-based validation for different configurations.
- Intelligent Water Measuring System for Commercial-grade Water Meter** Aug 2021 - Apr 2022
- Final year project on developing commercial grade smart water meter including an accurate electronic water measuring system with long-lasting battery life and Nb-IoT for communication.
- Digital Motor Controlling Firmware Development** Oct 2020 - Dec 2021
- Developed a V/Hz controller for AC Induction (ACI) motors and a Permanent Magnet Synchronous (PMS) motor controller using a TI C2000 MCU.
- Medical Chair Firmware Development** Oct 2020 - Dec 2021
- Developed functions and algorithms in the firmware to control three linear actuators using BLE enable MCU.
- Multicore Processor Design for Matrix Multiplication** Apr 2020 - Jul 2021
- Designed an application-specific multicore processor for matrix multiplication.
 - Developed the instructions, micro-instructions and Instruction Set Architecture for matrix multiplication.

EXTRA READINGS

- Hardware Description Languages for FPGA Design** Jul 2020
University of Colorado Boulder *Coursera*
- [Certificate](#)
- Hardware Security** Ongoing
University of Maryland *Coursera*

ACCOMPLISHMENTS

- Full Assistantship** 2023
Received full assistantship for PhD program in Computer Science (CISE) from University of Florida.
- “Mahapola” Merit Scholarship** 2017-2022
“Mahapola” Merit Scholarship offered for Undergraduate Studies by Government of Sri Lanka.
- Sakura Science Program** 2017
Participated in Sakura Science Program in Japan
- Mathematics OLYMPIAD** 2013
Selected to provincial mathematics OLYMPIAD team
- Dhamma School Oratory Competition** 2013
All Island 1st place.
- Announcing Competition** 2010
All Island 1st place at the announcing competition organized by Mahamaya College, Kandy, Sri Lanka

Resource Person

Conducted two days VHDL seminar for Engineering Technology students at University of Kelaniya, Sri Lanka

Member

LEO Club of University of Moratuwa

- Co-Chairmen of Project - "Mahesh Abeywickrama Memorial Debate Competition (2018)".
- Chairmen of Project "Arama Ropa (2018)".

Founding Members

Kegalle Medicine, Engineering Students Society (KeMESS)

- Conducted and organized G.C.E A/L seminar series.