

VIJAYA KUMAR SUNDAR

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RESEARCH INTERESTS

Safety Critical Systems, Functional Safety Standards, Real-Time Embedded Systems, Modeling and Simulation

EDUCATION

Nanyang Technological University

January 2015 - present

Currently pursuing Ph.D. in Computer Science and Engineering

NTU, Singapore

Thesis Title: Practical Considerations in Mixed Criticality Systems

- Advisor: Assoc. Prof. Arvind Easwaran

Sri Sairam Engineering College, Chennai

August 2008 - May 2012

B.E. in Electronics and Instrumentation Engineering

Anna University, Chennai

Thesis Title: Thermal Modeling of Thermocouple for Nuclear Reactors

TECHNICAL EXPERTISE

Safety Standards ISO 26262

Languages Java, C

Operating Systems Micrium, FreeRTOS, Litmus-RT, Linux

RESEARCH EXPERIENCE

Nanyang Technological University

Jan 2015 - present

Ph.D. Scholar

NTU, Singapore

- Interpret the requirements of ISO 26262 (functional safety standard for automotive systems) for the safety critical software modelling and scheduling for safety systems with multiple criticality levels.
- Built a realistic automotive test-bed to understand the performance of different software model.

The University of Tokyo

July 2017 - August 2017

Research Intern

Tokyo, Japan

- Collaborated with the software developers of Autoware, a linux based autonomous vehicle software platform to analyse the performance of the distributed architecture of Autoware components.

Indira Gandhi Centre for Atomic Research

January 2012 - June 2012

Research Intern

Kalpakkam, Chennai

- Researched on the thermal modeling of thermocouples for temperature measurement.
- Explored and analysed different factors affecting the temperature measurement in a thermocouple.

Wipro Technologies

December 2012 - July 2014

Project Engineer

Bengaluru, India

- Developed test bed/scripts to facilitate feature and integration testing of Teamcenter - Product Lifecycle Management (PLM) Software.

TEACHING EXPERIENCE

CE4053 Embedded Operating Systems

August 2015 - December 2015

Teaching Assistant, School of Computer Science and Engineering

NTU, Singapore

- Designed different course projects based on Micrium RTOS running on ST Evalbot platform.
- Mentored students for the course project and conducted project review meeting.

CE7452 RTOS for Cyber-Physical Systems

January 2016 - May 2016

*Teaching Assistant, School of Computer Science and Engineering**NTU, Singapore*

- Designed different course projects based on FreeRTOS running on TI Hercules Development Board.
- Mentored students for the course project and conducted project review meeting.

CE/CZ2005 Operating Systems

August 2016 - December 2016

*Teaching Assistant, School of Computer Science and Engineering**NTU, Singapore*

- Taught lectures on Threads, Synchronization and Virtual Memory implementation on NachOS.
- Conducted quizzes and grading lab assignments.

MENTORING EXPERIENCE

Hardware and Embedded Systems Laboratory*Project Supervision for Postgraduates (MSc Embedded Systems)**NTU, Singapore*

- Dino David: Building test bed for automotive systems.
- Sinduja: Implementation of Controller Area Network(CAN) for Mixed Criticality Systems.

CO-CURRICULAR ACTIVITIES

Co-ordinator, Hospitality Team

April 2018 - May 2018

*IEEE International Symposium on Real-Time Computing**ISORC 2018*

- Responsible for preparing budget, booking locations and securing food and drinks for the conference
- Developed relationship with local vendors and negotiated on the event packages

AWARDS AND SCHOLARSHIPS

Research Scholarship, Nanyang Technological University

2015 - 2019