# Curriculum Vitae

## PERSONAL INFORMATION


A. Ajith Kumar S.

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Sex Male | Date of birth 16/01/1988 | Nationality Indian


## WORK EXPERIENCE

16/04/2012–Present

### PhD Research Fellow

Bergen University College, Bergen, Norway

**Skills acquired**: Project management (planning & implementation), pro-activeness, time management, adaptability, presentation, and publishing.

**DMA-MAC protocol for Industrial Wireless Sensor Network (IWSN)**

**Description**: Design, development and deployment testing of a protocol for medium access control for Industrial Wireless Sensor Network.

**Responsibility**: State of the art study, identification of area of work for industrial applications in WSN, planning and implementation of the project.

- Requirement gathering for the protocol for industrial application.
- Selection of required tools, analysis and comparison with related tools.
- Selection of hardware for implementation and deployment testing.
- Publishing results and designs in scientific conferences and journals.

**Platform and Technology used**: nesC, C++, Python, OMNeT++ MiXiM, TinyOS, Uppaal, CPN.

**Applications**: Home/Building automation, Industrial automation, etc.

**Notable publication:** An Industrial perspective on Wireless Sensor Networks – A survey of requirements, protocols and challenges. *IEEE Communications Surveys & Tutorials Journal*

**Model-Based Development for Protocols for IWSN**

**Description**: Tool support for design and development of protocols for IWSN. The tool plugins include possible code generation for simulation (OMNeT++ MiXiM) and implementation platforms (TinyOS).

**Responsibility**: Study of possible design flows, comparison with state of the art, extensions for existing tools.

- Includes collaboration to understand the core tool and design extensions.
- Study and implementation of possible model patterns for generation.

**Platform and Technology used**: nesC, C++, OMNeT++ MiXiM, TinyOS, CPN.

**Applications**: Code generation for verified software models.

16/04/2012–01/06/2016

### Lecturer (Java- 3 Semesters)

Bergen University College, Bergen, Norway

**Description**: The contract as a research fellow also included teaching students taking up the bachelor courses for introduction to Java.

**Responsibility**: Preparing lectures covering the topics of interests, conducting practical labs for practice, assignments, and also preparing exam questions.

**Platform and Technology used**: Java, Eclipse, PowerPoint.

01/08/2009–01/07/2010

### Teaching assistant ( Linux and C programming)

Manipal University, Udupi, India

## EDUCATION AND TRAINING

01/08/2010–01/08/2011

### Master of Science in Computer Science

Technische Universiteit Eindhoven, Eindhoven (Netherlands)

**Schedulability analysis extension for Octopus (a toolset)**: Jan -- July (2011)

**Description:** Internship in the Octopus project. The project was to create a tool for design space exploration for embedded system software.

**Responsibility:** To create a tool extension for the Octopus toolset that performs schedulability analysis, to add into design space exploration.

- Includes collaboration with other extension developers

**Platform and Technology used:** Java, Eclipse, Uppaal, SVN.

**Design and analysis of packet control system:** Oct – Dec (2010)

**Description:** Assignment project for the system validation course. Includes creating a model of the packet control system and verifying the model for correctness. Mu calculus based tool mCRL2 was used for design and verification.

**Responsibility:** To create the model in collaboration with group members, verify the correctness and to record the results in a report.

**Platform and Technology used:** mCRL2.

01/07/2009–01/07/2010

### Master of Technology in Software Engineering

Manipal University, Manipal (India)

**Symbolic model checking of a Real-Time scheduling algorithm:** Feb – April (2010)

**Description:** As a part of an assignment for mathematical logic course, continued further towards a publication. Assessment of an algorithm for scheduling jobs on processors.

**Responsibility:** To create the model in collaboration with group members, verify the correctness and to record the results in a report. The work was also published in a conference.

**Platform and Technology used:** NuSMV.

## PERSONAL SKILLS

Languages: Tulu (Mother Tongue), Kannada, Hindi, English (Fluent), Norwegian (B1)

Job-related skills

- **Software Skills:** C/C++, nesC, JAVA, Python.
- **Hardware:** Zolertia Z1 (CC2420) WSN platform, Raspberry Pi, Arduino.
- **IDEs:** Eclipse, Microsoft Visual Studio.
- **Embedded OS:** TinyOS, **Other OS:** Windows, Linux.
- **Simulators:** OMNET++ (MiXiM), Castalia.
- **Design and Verification tools:** Uppaal, CPN, mCRL2, NuSMV.

## EXTRA CURRICULAR

- Participated in Forsker Grandprix Bergen 2014, a competition for PhD students around the city and the country to present their research to the general public.
- Volunteering as an Instructor for teaching salsa, BSI-Dans, Bergen, Norway. (Since Høst 2014)

## LINKS

- Homepage: http://home.hib.no/ansatte/aaks/
- LinkedIn: http://no.linkedin.com/in/irajithkumar
- Scholarly Profile: https://scholar.google.no/citations?user=r6PrmBwAAAAJ&hl=en