

# Vajira Thambawita

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## Education

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- **MPhil** **2011–2017**  
*Department of Computer Engineering, University of Peradeniya* *Sri Lanka*
- **BSc. Eng. (Honors) in Computer Engineering** **2007–2011**  
*Department of Computer Engineering, University of Peradeniya* *Sri Lanka*  
Graduated with Second Class Honors (Upper Division) with a GPA of 3.65 out of 4.00

## Employment and Experiences

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- **Lecturer (Probationary)** **August 2013–present**  
*Department of Computer Science* *Uva Wellassa University, Sri Lanka*
  - **Teaching:** Microcomputer Architecture and Logic Design, Advanced Database Management Systems, Artificial Intelligent Systems, Fuzzy Logic and Fuzzy Controllers, Cryptographic Systems, System Level Programming, Computer Systems Architecture
  - **Supervision:** Undergraduate Research Projects
- **Visiting Lecturer** **May 2017–November 2017**  
*Department of Computing and Information Systems* *Sabaragamuwa University, Sri Lanka*
  - **Teaching:** Embedded Systems
- **Lecturer (Temporary)** **April 2013–August 2013**  
*Department of Computer Science* *Uva Wellassa University, Sri Lanka*
  - **Teaching:** Distributed and Parallel Computing, Microelectronics
  - **Temporary Computer System Analyst**
- **Instructor (Temporary)** **September 2011–April 2013**  
*Department of Computer Engineering* *University of Peradeniya, Sri Lanka*
  - **Conducting Laboratory Classes and Preparing Handouts:** Logic Networks, Computer Interfacing, Computer Architecture, Programming Language, Systems and Network Programming Lab and Project, Computer Programming, Computing, Operating Systems
- **Software Engineer (Undergraduate Trainee)** **May 2010–November 2010**  
*Air Force Head Quarters* *Sri Lanka*
  - **Software development:** Human Resource Management System

## Technical and personal skills

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- **Programming Languages:** Proficient in: C, CUDA, Latex, Shell scripting  
Also basic ability with: Assembly, VBA, VHDL, JAVA, Python, Matlab, Version Control Systems, HTML, CSS.
- **Other:** Good teaching skills, Presentation skills, Speed typing, Servers handling (Linux and Windows), Creative Thinking (Won the 1st place two times in Topcoder design competitions).

## Publications

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- 1 D. R. V. L. B. Thambawita, R. Ragel, and D. Elkaduwe. To use or not to use: Graphics processing units (GPUs) for pattern matching algorithms. In *7th IEEE International Conference on Information and Automation for Sustainability*, pages 1–4, Dec 2014.
- 2 D. R. V. L. B. Thambawita, R. Ragel, and D. Elkaduwe. An Optimized Parallel Failure-less Aho-Corasick Algorithm for DNA Sequence Matching. In *8th IEEE International Conference on Information and Automation for Sustainability (ICIAFS)*, Dec 2016.
- 3 D. R. V. L. B. Thambawita, R. Ragel, and D. Elkaduwe. To Use or Not to Use: CPU's Cache Optimization Techniques for GPGPUs. In *8th IEEE International Conference on Information and Automation for Sustainability (ICIAFS)*, Dec 2016.
- 4 V. Thambawita, N. C. Ellepola, R. Ragel, and D. Elkaduwe. GPGPU: To Use or Not To Use? In *Peradeniya University Research Sessions (PURSE)*, 2013.
- 5 V. Thambawita, K. Herath, R. Ragel, and D. Elkaduwe. BUILDING A LOW-COST TELEPRESENCE ROBOT WITH GENERIC HARDWARE. In *IET-YP*, 2011.
- 6 V. Thambawita, K. Herath, R. Ragel, and D. Elkaduwe. Low Cost Telepresence Robot. In *Peradeniya University Research Sessions (PURSE)*, page 33, 2011.

## Projects

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### Individual contributions.....

- **Cache Optimization Techniques for the General Purpose Graphic Processing Unit:** *MPhil Project*

Achieving high-performance output using GPGPUs are not the easy task compared with normal programming concepts. In this research, the CPU memory optimization techniques have been adopted into the GPGPU to identify rare cache performance improvement techniques rather than common GPGPU's best practices

- **Low cost Tele-Presence Robot:** *4th year final project*

The Tele-presence robot can be used to appear or present at a separate location virtually instead of human presenter. The robot which is built from low cost components achieves the task of Tele-presence robot

- **WIFI Robotic car:***Project developed for the department as an exhibition item*  
This robotic car is controlled remotely via WIFI network to drive into inaccessible locations. It is capable of giving a real time video feedback and sound feedback to the controlling end
- Undergraduate research projects supervised by me  
(published in Uva Wellassa University symposiums).....
- **Automated Dispensary Mechanism for Government Hospitals** - *Research Symposium 2016, Uva Wellassa University*
- **Fuzzy Logic and Fingerprint Based System to Improve the Productivity of Teaching Process in Sri Lankan Schools** - *Research Symposium 2016, Uva Wellassa University*
- **Real Time Traffic Light Time Analyzer** - *Research Symposium 2016, Uva Wellassa University*
- **Medical Expert System for Analyzing Heart Diseases in Sri Lanka** - *Research Symposium 2016, Uva Wellassa University*
- **A Conceptual Model for Internet Based Carpooling System via a Visibility Assessment to Match the Requirement of Sri Lankan Community-** *Research Symposium 2016, Uva Wellassa University*
- **Pronunciation Training System to Enhance Sinhala and Tamil Language Skills-** *Research Symposium 2016, Uva Wellassa University*
- **Virtual Laboratory System for A/L Physics Units of Electricity-** *Research Symposium 2016, Uva Wellassa University*
- **Project LangfiKA - Open Source Language Enhancement Tool-** *International Research Symposium, Uva Wellassa University, 2017 (IRSUWU2017)*
- **High Efficient Tamil Speech Recognition System for Sri Lanka-** *International Research Symposium, Uva Wellassa University, 2017 (IRSUWU2017)*
- **High Standard Exam Paper Maker-** *International Research Symposium, Uva Wellassa University, 2017 (IRSUWU2017)*
- **Smart Bulletin Board-** *International Research Symposium, Uva Wellassa University, 2017 (IRSUWU2017)*
- **Analyzing Accuracy of Existing Feature Extraction Methods-** *International Research Symposium, Uva Wellassa University, 2017 (IRSUWU2017)*
- **Vision Based Autonomous Micro Aerial Vehicle with Graphic Processing Unit Acceleration-** *International Research Symposium, Uva Wellassa University, 2017 (IRSUWU2017)*
- **Smart Light Controlling System for Lecture Halls-** *International Research Symposium, Uva Wellassa University, 2017 (IRSUWU2017)*

## Professional qualifications

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- Followed a certificate course on Teaching in Higher Education (160 hour course - accredited by the University Grants Commission Sri Lanka)
- Participated in the workshop on Research Management Tools and Techniques at the Staff Development Center, Uva Wellassa University, Sri Lanka
- Successfully completed the Workshop on Scientific Writing conducted for the PhD and MPhil candidates at Faculty of Engineering, University of Peradeniya, Sri Lanka
- Followed a course on Computer Hardware at the Vocational Training Authority of Sri Lanka

## Membership of professional societies

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- Member of the Engineering Alumni, University of Peradeniya (2011 - Present)
- Associate Member of the Institution of Engineers, Sri Lanka (2012 - Present)
- Member of the IEEE (2014 - Present)
- Student councilor of the IEEE, Uva Wellassa University Chapter (2014 - 2016)
- Member of the Internet Society (2016 - Present)

## Extra-curricular activity

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- Member of the School Computer Club
- Member of the Sri Lanka School Cricket Association
- Member of the School Astronomy Club

## References

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| ○ Dr. Roshan G. Ragel<br>Senior Lecturer<br>Department of Computer Engineering<br>University of Peradeniya<br>Sri Lanka<br>+94.81.239-3914<br><b>ragelrg@gmail.com</b>                   | ○ Dr. J. Ekanayake<br>Senior Lecturer<br>Department of Computer Science and Tech:<br>Uva Wellassa University<br>Sri Lanka<br>+94.71.195-4433<br><b>jayalathek@appsc.sab.ac.lk</b> |
| ○ Dr. Dhammika Elkaduwe<br>Head of the department<br>Department of Computer Engineering<br>University of Peradeniya<br>Sri Lanka<br>+94.81.239-3913<br><b>dhammika.elkaduwa@gmail.lk</b> | ○ Dr. Michael Riegler<br>Research Scientist<br>Simula Research Laboratory<br>Martin Linges vei 25<br>1364 Fornebu<br>Norway<br>+47.40.106-386<br><b>michael@simula.no</b>         |