

Sulochana Sooriyaarachchi | CV

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A researcher in computer science and engineering determined to make a significant contribution in a vibrant international research community that invent solutions to real world problems.

Education

- **PhD, Computer Science and Engineering, University of Moratuwa** **Sri Lanka**
Thesis: Routing and Control Mechanisms for Dense Mobile Ad-hoc Networks, 2011–2016
Awarded a Commonwealth Split-site PhD Scholarship UK 2013 for one year in University of Surrey
- **MSc in Computer Science, University of Moratuwa** **Sri Lanka**
GPA: 3.66/4.2 2007–2010
- **BSc Eng Hons, University of Peradeniya** **Sri Lanka**
Second class upper division 2001–2006
Specialization: Electrical and Electronics Engineering

Research experience

- **IntelliSense laboratory**
Founder Aug 2017–to date
 - I established and I am currently developing a research laboratory that executes undergraduate and postgraduate research and development projects in the areas of acoustic, depth, motion and vision based sensing and intelligent controls.
 - Currently two full time MSc students have enrolled and around ten undergraduate projects are in progress with several potential industry collaborations.
 - Secured a competitive grant from Accelerating Higher Education Expansion and Development (AHEAD) project by Ministry of Higher Education and Highways and University Grants Commission. Also obtained a Senate Research Committee grant from University of Moratuwa.
 - Became an academic member of IBM OpenPOWER foundation. Initiated a major industry collaboration with a leading telecommunication and IT solution provider.
- **Bioacoustics**
Co supervisor Jan 2017–Jan 2018
In collaboration with Commonwealth Scientific and Industrial Research Organisation (CSIRO), I guided a team of BSc Eng Hons final year undergraduates that developed a continuous realtime bird call identification system with a memory optimized sound capturing device using a novel preprocessing technique.
- **Robotics**
Supervisor Jan 2008–on going
I am currently supervising a team of undergraduates who implement a collaborative navigation mechanism of mobile robots using a point cloud based perception of environment. This is a follow up of a collaborative research with CSIRO that was conducted from Jan 2017 to Dec 2017. I am also a founding member of the Center for Advanced Robotics (CeAR) of University of Moratuwa.

○ **Industrial research**

Co- supervisor

Jan 2018–on going

In collaboration with a leading apparel manufacturer, I am currently supervising a vision based fabric defect detection project. The AHEAD grant worth Rs. 30 million was secured for this project

○ **Defense research**

Co- supervisor

Oct 2016–Dec 2016

In collaboration with Center for Research and Development (CRD), Ministry of Defense I supervised a team of undergraduates who implemented a video stitching algorithm and a proof of concept system for a defense application. I also supervised another team of undergraduates in implementing a full body motion detection system for training platoon marching for CRD

○ **Multidisciplinary research**

Team member

Jan 2017–Jan 2018

I was an active member in a pilot project to 3D map historical monuments in Sri Lanka including world heritage site of Sigiriya using Hovermap technology invented by CSIRO. This project was a collaboration of CSIRO, Department of Computer Science and Engineering of the Faculty of Engineering and Centre for Heritage and Cultural Studies of the Faculty of Architecture in University of Moratuwa. Currently, discussions are held with the Department of Archeology and Central Cultural Fund in Sri Lanka for setting up a continued digital documentation project

○ **Research publishing**

Editor/Reviewer/Organizer

Jan 2017–Jan 2018

I was a reviewer for the following publication venues:

- Journal of National Science Foundation of Sri Lanka (JNSF)
- International Conference on Advanced Communications Technology (ICTACT)
- Moratuwa Engineering Research Conference (MerCon)

I was the editor for eMag, an educational magazine targetted at School Students by well known Sri Lankan IT company, Ewis. Member of Engineering Researcher Committee of University of Moratuwa. Organizing team member of MerCon and was the publicity chair in MerCon 2018. I have evaluated following grant proposals:

- National Research Council's Investigator Driven Grants
- Research grants of Faculty of Applied Sciences, University of Sri Jayawardenepura

Publications

H. Weerasena, M. Jayawardhana, D. Egodage, H. Fernando, S. J. Sooriyaarachchi, C. D. Gamage, and N. K. Kottege. Continuous automatic bioacoustics monitoring of bird calls with local processing on node level. In *IEE Region 10 Conference (TENCON)*, Jeju, Korea, Oct 2018.

T. De Silva, P. Cooray, I. Chinthaka, P. Kumara, and S. J. Sooriyaarachchi. Comparative analysis of octomap and rtabmap for multi-robot disaster site mapping. In *International Conference on Advances in ICT for Emerging Regions (ICTer 2018)*, Colombo, Sri Lanka, Sep 2018.

V. B. K. D. Vibodha, P. Bandara, T. Bandara, T. Ranatunga, S. J. Sooriyaarachchi, and C. R. De Silva. Automated fabric defect detection. In *International Conference on Advances in ICT for Emerging Regions (ICTer 2018)*, Colombo, Sri Lanka, Sep 2018.

S. J. Sooriyaarachchi and C. D. Gamage. Endcast: Mobile stateless data delivery in MANETs. *EURASIP Journal on Wireless Communications and Networking*, 147:2–25, August 2017.

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S. J. Sooriyaarachchi, W. A. C. Fernando, and C. D. Gamage. A cell biology inspired model for managing

packet broadcasts in mobile ad-hoc networks. *Engineer: Journal of the Institution of Engineers, Sri Lanka*, 48(4):25–32, October 2015.

S. Sooriyaarachchi. A cell biology inspired data packet forwarding scheme in mobile ad-hoc networks. In *IEEE 16th International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM)*, Boston, MA, USA, June 2015.

S. J. Sooriyaarachchi and C. D. Gamage. A cell biology inspired model for managing packet broadcasts in mobile ad-hoc networks. In *The 17th International Conference on Advanced Communications Technology (ICACT 2015)*, pages 693–698, Pyeong Chang, Korea, July 2015.

S. J. Sooriyaarachchi, W. A. C. Fernando, and C. D. Gamage. Evaluation of scalability of hybrid wireless mesh protocol in IEEE 802.11. In *International Conference on Advances in ICT for Emerging Regions (ICTer 2015)*, pages 152–159, Colombo, Sri Lanka, Aug 2015.

S. J. Sooriyaarachchi. Poster: A cell biology inspired model for controlling redundant rebroadcasts in mobile ad-hoc networks. In *in ACM 2015 Workshop on Wireless of the Students, by the Students and for the Students (S3'15)*, page 10, Paris, France, Sep 2015.

A. I. Gunarathna, A. G. P. Ambegoda, N. I. Katugampala, H. A. D. W. Bandara, and S. J. Sooriyaarachchi. Maharawana: an open source grammar checker for sinhala. In *Young Scientists Forum 2011 of National Science and Technology Commission (NASTEC)*, Colombo, Sri Lanka, Jan 2012.

S. J. Sooriyaarachchi and C. D. Gamage. A testbed for ad-hoc networking - connecting with facebook friends on the move. In *Seventeenth International Conference of the South Asian Network Operators Group (SANOG)*, Colombo, Sri Lanka, Jan 2011.

S. J. Sooriyaarachchi and V. Nanayakkara. Game-based learning in engineering education in sri lanka. In *Sixth National Conference of Sri Lanka Association for Improving Higher Education Effectiveness (SLAIHEE)*, page 10, University of Colombo, Sri Lanka, Apr 2010.

S. K. Wanniarachchi, U. V. Wanniarachchi, K. H. Samarappuli, V. Nanayakkara, and S. J. Sooriyaarachchi. Integrated tool for web application performance evaluation. In *Computer Science and Engineering Society (CSES) Conference 2010*, pages 95–102, University of Moratuwa, Sri Lanka, 2010. ISBN: 978-955-9027-37-9.

S. J. Sooriyaarachchi. A case study on e-learning system workload characterization and user behaviour. In *Twelfth International Conference of the South Asian Network Operators Group (SANOG)*, Kathmandu, Nepal, Aug 2008.

S. J. Sooriyaarachchi. *Moodle 1.8+ Teacher Manual (Sinhala)*. LAKapps project, University of Moratuwa, Sri Lanka, 2008. ISBN:978-955-9027-27-0.

S. J. Sooriyaarachchi. *Moodle 1.8+ Student Manual (Sinhala)*. LAKapps project, University of Moratuwa, Sri Lanka, 2008. ISBN: 978-955-9027-26-3.

G. Mavalan, R. Partheepan, J.A.P. Rajkumar, S.J. Sooriyaarachchi, and K.H.N.S. De Silva. Electrical system at faculty of engineering: University of peradeniya – energy saving and power quality study. In *Annual Technical Conference by IEE Young Members Section*, Katubedda, Sri Lanka, 2005.

Professional Qualifications

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|---|---------------------|
| ○ Certificate in Teaching is Higher Education (CTHE), University of Colombo | Sri Lanka |
| ○ <i>Staff and Educational Development Association (SEDA) accreditation for CTHE,</i> | <i>2008–2009</i> |
| ○ Member of Computer Society of Sri Lanka | CSSL |
| | <i>2016–to date</i> |
| ○ Associate Member, Institute of Engineers Sri Lanka | IESL |
| | <i>2008–to date</i> |

- Associate Member of The Institute of Localisation Professionals

TILP
2009–to date

Achievements

- **Young Woman Engineer (YWE) Award 2017**
Finalist in The Institution of Engineering and Technology (IET) Sri Lanka YWE Award 2017,
Scholarships.....
- **Commonwealth Scholarship from the Commonwealth Scholarship Commission in UK**
for a one year of research in University of Surrey, UK, 2014-2015
- **Mahapola Higher Education (Merit) Scholarship**
from The University Grants Commission of Sri Lanka, 2001-2006
for undergraduate studies at the University of Peradeniya, Sri Lanka
Grants.....
- **Senate Research Grant - University of Moratuwa 2018**
principle investigator,
- **Accelerating Higher Education Expansion and Development (AHEAD) Research, Innovation and Commercialization**
coordinator and research lead,
- **Asia Pasific Advanced Networking 2017**
fellow,
- **ACM travel grant for MobiCom 2015**
author,
- **IEEE travel grant for WoWMoM 2015**
author,
- **Other**.....
- **Industrial Training, Ceylon Electricity Board**
Trainee Engineer on CEB Operations, 12/2004 – 03/2005

Academic Experience

- **Course design:**
Robotics and Automation, Embedded Networks, Computer architecture, Programming Challenge
- **Teaching:**
Robotics and Automation, Computer Architecture, Principles of Computer Communication
- **Course coordination:**
Automation Challenge I and II, Programming challenge I and II, Integrated Computer Engineering project, Visual Programming, Computer Networks, Term projects on micro controller based computer controlled robots, Non-technical modules: meditation, classical music, video production, photography
- **Student coordination:**
Academic advisor for ACM student chapter of University of Moratuwa, Academic counseling for Second Year Students (Semester 2 and 3 Coordinator), Academic counseling for First Year Students (Pre-Academic Term Coordinator), Staff-Students Liaison Committee Member representing the Department of Computer Science and Engineering, a student counsellor for University of Moratuwa
- **Administrative responsibilities:**
Convener of Exhibition Committee of University of Moratuwa, Member of Time Table committee, Lecturer in charge of Level 2 Computer Laboratory (65 computers), Lecturer in charge Data Communications Laboratory, Administrator of the departmental e-learning system, Coordinator for the program accreditation

process of the department by Institute of Engineers, Sri Lanka (IESL)

References

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I hereby certify that above particulars given by me is true and correct to the best of my knowledge.

S. J. Sooriyaarachchi