

Shani Amarasinghe

Address: 31, Cumberland Chase, Hampton Park, VIC 3976, AUSTRALIA

Email: Amarasinghe.s@wehi.edu.au

Mob: +61 42 7777 087

LinkedIn: <https://au.linkedin.com/pub/shani-amarasinghe/4a/b37/279>

Areas of Research, Experience and Skills

Bioinformatics

Linux/Unix environment

Computer Pattern Recognition

Neural networking (MatLab)

Biological Statistics (R, SPSS, Minitab)

Molecular Biology

Immunology

Database Management

Shell/bash scripting

Perl, Python languages

Medical Informatics

PHP, Java, JavaScript, HTML, XML

Education

The University of Adelaide, Adelaide, Australia

04/14 to 03/18

PhD in Bioinformatics (Awarded Dean's Commendation for Thesis Excellence)

Thesis title: Transcriptional Networks Associated with Plant Salinity Tolerance

University of Colombo, Reid Avenue, Colombo 07, Sri Lanka

07/07 to 11/11

B.Sc. (Hon's) in Bioinformatics: Second Class Upper Division (G.P.A.: 3.36/4.00)

International English Language Testing System (IELTS): Academic

Overall score 8.00/9.00; Listening 9.00/9.00: Reading 9.00/9.00: Writing 7.00/9.00: Speaking 7.50/9.00 (May 2018)

Coursera Online Certification for Machine Learning

Offered by Professor Andrew Ng, Stanford University, California, USA (Pending)

ChIP-Seq Practical Training

Offered by EMBL-EBI, John Hopkins University, Baltimore, USA (April, 2018)

Coursera Online Certification for Data Science Specialization

Offered by John Hopkins University, Baltimore, USA (January, 2013)

Institute of Biochemistry, Molecular Biology and Biotechnology, University of Colombo, Sri Lanka

Certificate Course in Molecular Biological Techniques (August, 2012)

British Computer Society, UK

Professional Graduate Diploma (2010), Graduate Diploma (2010), Certificate Level (2007)

Coursera Online Certification for R programming

Offered By Professor Roger Peng, John Hopkins University, Baltimore, USA (January, 2013)

Sirimavo Bandaranaike Vidyalaya, Colombo 07, Sri Lanka

G.C.E. A/L (2006), G.C.E. O/L (2002)

Research Experience and Publications

Publications

Amarasinghe, S., Su, S., Dong, X. et al. (2020) Opportunities and challenges in long-read sequencing data analysis. *Genome Biol* 21, 30 (2020). <https://doi.org/10.1186/s13059-020-1935-5>

Amarasinghe S., Watson-Haigh N.S., Byrt C., James R., Qiu J., Berkowitz O., Whelan J., Roy, S.J., Gilliam M., Baumann U. (2019) Transcriptional variation is associated with differences in shoot sodium

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accumulation in distinct barley varieties. *Environmental and Experimental Biology*. DOI: 10.1016/j.envexpbot.2019.103812

Amarasinghe S., Watson-Haigh N.S., Gilliam M., Roy, S.J., Baumann U. (2016) The evolutionary origin of CIPK16: A gene involved in enhanced salt tolerance, *Molecular Phylogenetics and Evolution* DOI:10.1016/j.ympev.2016.03.031

Amarasinghe S., Kathirarachchi H., and Udagama P. (2014) Conserved Regions of Plasmodium Vivax Potential Vaccine Candidate Antigens in Sri Lanka: Consensus In silico Analysis of Prospective Conformational Epitope Regions *Asian Pacific Journal of Tropical Medicine*. DOI: 10.1016/S1995-7645(14)60146-2

Amarasinghe S., Watson-Haigh N.S., Gilliam M., Roy, S.J., Baumann U. (In Prep.) AtCIPK16 Mediates Salt Stress Through Phytohormones and Transcription Factors; *(to be submitted to Plant Direct)*

Dias S., Amarasinghe S., Premerathne H. P., Kathirarachchi H., Udagama P., Escalante A.A. (In Prep.) Combined Analysis of the Genetic Diversity of CSP, MSP-1, MSP-3, AMA-1 and DBP Vaccine Candidate Antigens of *Plasmodium vivax* in Sri Lanka; *(to be submitted to Elsevier Vaccine)*

Selected Oral Presentations

Amarasinghe S., Tian L., Paoli-Iseppi R.E., Clark M.B., Jabbari J.S., Ritchie M.E. (2019) Long Reads for scATAC-seq, AGTA, Melbourne, 7-9th October 2019, Pullman Melbourne Albert Park.

Amarasinghe S., Kathirarachchi H., and Udagama P. (2012). Predicting the conformational Epitope Regions of Potential Asexual Erythrocytic Stage Vaccine Candidate Antigens of *Plasmodium vivax* using Bioinformatics Tools, Proceedings of the 6th Biennial Scientific Sessions of Allergy and Immunology Society of Sri Lanka (in collaboration with National Science Foundation), 14-15 June 2012, Medical Research Institute, Colombo

Selected Posters Presentations

Amarasinghe S., Watson-Haigh N.S., Gilliam M., Roy, S.J., Baumann U. (2014). Narrowing Down On CIPK16 Orthologues: A Gene Involved In Enhanced Salt Tolerance. BioinfoSummer 2014 (Monash University, Clayton Campus, Melbourne, Australia).

Professional Experience

Postdoctoral Research Fellow - Bioinformatics (full time)

09/18 to 03/21

Walter and Eliza Hall Institute, Australia

Joined as a part of Ritchie Laboratory (Epigenetics and Development Division). Working on single cell RNA-Seq, single-cell ATAC-Seq and long-read sequencing data and related tool development. We also work on benchmarking a dataset that can be used in analyzing newly developed single-cell and long-read data analysis tools.

PhD Student - Bioinformatics (full time)

04/14 to 03/18

The University of Adelaide, Australia

Overall scientific goal of my PhD project was to at least partly fathom some aspects of salinity tolerance mechanisms in plants such as Arabidopsis and barley through bioinformatics techniques such as molecular phylogenetics, transcriptomics, network analysis and variant analysis. The specific objectives of this project were to a) identify the downstream regulatory network controlled by *AtCIPK16* in *Arabidopsis thaliana* b) perform a

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comprehensive evolutionary study of *CIPK16s* in grasses and c) evaluate the salt tolerance mechanisms of *Hordeum vulgare* L. (barley).

Bioinformatics techniques and tools used:

Alignment and Transcriptomic tools	TopHat, Bowtie, STAR, Hisat2 read alignment tools; FastQC for quality checking; <i>Limma</i> , <i>edgeR</i> , <i>DESeq</i> , <i>Rsubread</i> R packages
Co-expression network analysis tools	WGCNA
Sequence/variant analysis	BLAST++, Jalview, CLUSTAL W, MUSCLE, FASTX-Toolkit, SAM tools, BCF tools, VCF tools, SNPEff, SNPSift, GATK suite
Operating systems	Windows 98/2000/XP/Vista, Solaris, Linux/Unix, Mac.
Programming languages	R, Python, Perl, awk, sed
Annotation and visualisation tools/resources	Aracyc, Metacyc, KEGG, KASS, Blast Koala, BLAST2GO, Mapman, Cytoscape, AgriGO, TAIR, CLC Genomics Workbench
Other areas	LIMS (Laboratory Information Management System), Zotero, Minitab, Microsoft Office tools, Adobe software (Photoshop, Illustrator)

Scientist - Bioinformatics (full time)

04/13 to 03/14

Human Genetics Unit, Faculty of Medicine, University of Colombo, Sri Lanka

- Developed the Genome Analyzing Pipeline for HGU
- Developed and managed HGU's official website
- Documented the workflows and end user documentation for the website and the genome analysing pipeline
- Provided guidance and assistance to projects and prepare project reports
- Maintained the personal genome database

Teaching Assistant (full time)

10/11 to 02/13

Department of Plant Sciences, Faculty of Science, University of Colombo

- Was in-charge teaching assistant for the special students of Bioinformatics from 3rd and 4th years.
- Conducted practical tutoring sessions for the undergraduates of the department.
- Was involved in tutoring for other levels of undergraduates in the department

Conferences Attended/Presented work in

- AGTA 2019 (presentation title: Long Reads for scATAC-seq), Pullman Albert Park, Melbourne
 - Nanopore Day 2019 Melbourne, University of Melbourne
 - Oz-single cell 2019, University of Melbourne, Melbourne
 - Bioinfosummer 2016 (presentation title: Linking Transcriptome of *Arabidopsis thaliana* CIPK16 Transgenics with the Response to Initial Stages of Salt Stress), SAHMRI, Adelaide
 - Joint Research Meeting 2016, Australian Centre for Plant Functional Genomics, University of Adelaide, Adelaide
 - Combine student symposium 2015, Charles Perkins Centre, The University of Sydney
 - ABACBS 2015, Charles Perkins Centre, The University of Sydney
 - Bioinfosummer 2014 (presentation title: Narrowing Down on CIPK16 Orthologues: A Gene Involved in Enhanced Salt Tolerance), Clayton campus, Monash University, Melbourne
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- 6th Biennial Scientific Sessions of Allergy and Immunology Society of Sri Lanka (presentation title: Predicting the conformational Epitope Regions of Potential Asexual Erythrocytic Stage Vaccine Candidate Antigens of Plasmodium vivax using Bioinformatics Tools)

Achievements

- Dean's Commendation for Thesis Excellence (September 2018)
 - Full fee scholarship from the University of Adelaide and ACPFG PhD scholarship, 2014
 - The conference travel scholarship to attend BioInfoSummer 2014 in Melbourne, Australia
 - Merit Award by the National Research Council, Sri Lanka for research paper published in *Asian Pacific Journal of Tropical Medicine* 10/2014; 7(12):832-840. DOI: 10.1016/S1995-7645(14)60146-2
 - Best Science Student, Haverstock Secondary School, London, UK, 2000
 - Proficiency prize for the exhibit in the Science section; science and mathematics exhibition, Sirimavo Bandaranaike Vidyalaya, 1997
 - Proficiency prize for the exhibit in the Social Studies section; science and mathematics exhibition, Sirimavo Bandaranaike Vidyalaya, 1997
 - Prize for 8A's at G.C.E. O/L examination, Annual Prize Giving, Sirimavo Bandaranaike Vidyalaya, 2002
 - Subject Prize (Buddhism), Annual Prize Giving, Sirimavo Bandaranaike Vidyalaya, 1998
 - Class Prize for Grade 4, Annual Prize Giving, Sirimavo Bandaranaike Vidyalaya, 1995
 - Merit for Proficiency in Grade 2, Annual Prize Giving, Sirimavo Bandaranaike Vidyalaya, 1993
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Extracurricular Activities

Leadership Development Conferences

- **Local**
 - National Leader's Development Seminar, Sri Lanka (2009, 2010, 2011)
- **Overseas**
 - National Leader's Development Summit, Singapore (2009): Representing Sri Lanka
 - UNLEASH, Leader's Seminar, Malaysia (2011): Representing Sri Lanka

Professional Development, Office Bearing in Organizations and Societies

- Volunteered for a community engagement event of WEHI, "Art of Science", September 2019
- Executive committee (Professional Development), Postdoctoral Association - Walter and Eliza Hall Institute (2018)
- Facilitator for the hands-on R workshop, WEHI, October 2018
- South Australia representative of COMBINE (a student-run Australian organisation for researchers in computational biology, bioinformatics, and related fields) (2017)
- Executive committee member of AgPoGs (currently known as P.A.W.S) – University of Adelaide (2016)
- Executive Leadership Body member of AIESEC Organization for consecutive 2 years (2010-2012)
- Member of Botanical Society, University of Colombo (2010-2011)
- The Editor of Photographic Society 2004/05, Sirimavo Bandaranaike Vidyalaya, Colombo 07
- The President, Computer Society 2004/05, Sirimavo Bandaranaike Vidyalaya, Colombo 07

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Recreational Activities and Sports

- Member, University Tennis Team (Women, 2007/08), University of Colombo, Colombo 03
- Member, School Swimming Team, 2000-2005, Sirimavo Bandaranaike Vidyalaya, Colombo 07
- School Eastern Music orchestra, leading violin player, 2004/05, Sirimavo Bandaranaike Vidyalaya, Colombo 07
- The “Best Young Leader” award, CIMA awards Night, National Leader’s Development Seminar 2010, MIMT, Thulhiriya, Sri Lanka
- The “Best Organizing Committee” award for CDD 2010, CIMA awards Night, National Leader’s Development Seminar 2010, MIMT, Thulhiriya, Sri Lanka
- Inter-faculty sports meet (Tennis, women), 2008
- Bhathkande Sangeeth Exam, Lucknow, Class, Prathama in Violin Section, 2003
- Royal School of Music, Level II Violin, Merit, 2000
- Participation in School Swimming Competitions from 2000 to 2005

References

As per request