Hiruna Madushan Samarakoon

University of Peradeniya, Peradeniya 20400, Sri Lanka
(+94) 71 5715213
hirunas@eng.pdn.ac.lk
add website

RESEARCH INTERESTS	Bioinformatics, FPGA, Algorithm Optimization CPU/GPU, Mobile Computing, Networking and Security, Embedded Systems, HPC, Machine learning/ Artificial Intelligence

EDUCATION

University of Peradeniya, Peradeniya, Sri Lanka   Nov 2015 – Present
B.Sc. Eng in Computer Engineering

· Class: First Class
· Cumulative **GPA: 3.9 / 4.0**
· Dean's List 5/5 semesters
· Related Core Modules: Electronic Devices & Circuits, Computer Systems Engineering, Communication Networks, Signal Processing, Theory of Computation, Embedded Systems, Computer Architecture, Operating Systems, Database Systems, Machine Learning & Data Mining.

Trinity College Kandy, Kandy, Sri Lanka   Jan 2006 – Dec 2014

· 4 Distinction passes in Physical Science in the GCE Advanced level examination.

· Ranked 64th in Sri Lanka; 11th in Kandy District.

EXPERIENCE

20face, Enschede, the Netherlands.
Research and Development Intern, supervised by Dr. Tuseef Ali

PUBLICATIONS

1. Gamaarachchi, H., Lam, C.W., Jayatilaka, G., **Samarakoon, H.**, Simpson, J.T., Smith, M.A. and Parameswaran, S., 2019. "GPU Accelerated Adaptive Banded Event Alignment for Rapid Comparative Nanopore Signal Analysis". bioRxiv, p.756122. (to be published on BMC Bioinformatics)

2. **Samarakoon, H.**, Punchihewa, S., Senanayake, A., Ragel, R. Hammond, J., Stevanovski, I., Ferguson, J., Deveson, I.W. and Gamaarachchi, H., 2020. "Genopo: A nanopore sequencing analysis toolkit for Android smartphones". Submitted to Communications Biology (Awaiting reviews)

3. **Samarakoon, H.**, Ranasinghe, Y., Suriyage, M., Submitted in 2020, May, "Search Algorithm for a swarm robot system to monitor environmental conditions of a greenhouse", Submitted to 2020 IEEE International Conference on Robotics and Automation Engineering (ICRAE) (Awaiting reviews)

RESEARCH PROJECTS

Real-time DNA Methylation Profiling by aggregating computing power of smartphones 2019/20
University of Peradeniya. Supervised by Prof. R. Ragel and Mr. H. Gamaarachchi
Extending work listed under publications (2), using portable sequencing technologies like Oxford Nanopore Technology we investigate the possibility to execute a DNA methylation calling pipeline data batch-wise in parallel with sequencing.

An IoT of autonomous fishing boats   2018
University of Peradeniya. Supervised by Prof. R. Ragel and Dr. I. Nawinne
An IoT network with a set of autonomous bots that can harvest fish, working individually, and communicating with a local relay node, which is overseen by a central server was built. A client can set up relay nodes in different locations, deploy the fishing bots, and use the central server to get live updates.

Network packets routing simulation software 2017

University of Peradeniya. Supervised by Dr. K. Ratnam

An open-source software was designed to examine the associated delays and traffic in a predefined network topology. Adding new packets and modifying the topology are supported at runtime through a GUI.

NLP Based pipeline to extracts quotes from texts and produce multi-voiced audio-books 2018

University of Peradeniya.

Using Stanford NLP toolkit and Mary TTS engine, created software to produce audiobooks where the voice changes according to the characters.

AWARDS AND HONORS	· 2020 - **2nd runners up** at Data Storm v1.0, a machine learning and data science competition, organized by the Rotaract clubs of University of Moratuwa and University of Colombo.
	· 2019 - **2nd runners up** at Brainstorm 2019, Sri Lanka's Premier Biomedical Engineering Design Competition, organized by the IEEE EMBS Student Branch Chapter at University of Moratuwa.
	· 2018 - **1st runners up** at iHack 4.0, a 24-hour inter-university software development hackathon, organised by University of Colombo School of Computing ISACA Student Group
	· 2017 - **2nd runners up** at ACES Hackathon 2017 a software development hackathon, organized by the Association of Computer Engineering Students (ACES), Faculty of Engineering, University of Peradeniya.
	· 2018 - **successful participation at** 4IR Hackathon, a software development hackathon, organized SLASSCOM
	· 2016 and 2017 - **successful participation** at ACES Coders, an algorithmic programming competition organized by ACES.
OTHER PROJECTS	· A CPU implementation including ALU and memory management hierarchy written in VHDL
	· An Image Processing Library written in Assembly language
	· A Peripheral Interface Controller (PIC) as a USB interface for general purpose I/O operations
	· A social advertising platform to promote small scale business
WORK EXPERIENCE	· Instructor - University of Peradeniya, Sri Lanka Sept 2019 – Nov 2019
	· Industrial Trainee – 20face, Enschede, the Netherlands Feb 2019 – Aug 2019
	· Voluntary Network Administrator – Teaching Hospital, Kandy, Sri Lanka Jun 2018 – Sept 2018
SKILLS	· Programming skills: Python, Matlab, Java, C/C++, R.
	· Technical skills: Arduino, Processing Java, FreeCAD, AutoCad, Fritzing, MPLAB, EAGLE, Proteus, Simulink.
	· Mathematics: Numerical methods, Linear algebra, Partial differential equations, Fourier series, Number theory, Graph Theory, Stochastic Processes, Optimization
	· Languages: English (Professional fluency), Sinhala (Native)
EXTRA–CURRICULAR	· Leadership: President Sinhala Literary Union, Trinity college, Leader in all the group projects and competitions listed under awards and honors, Trinity college U13,15,17 hockey team vice-captain.
	· Team member: OGET 2018/19 team AIESEC University of Peradeniya, Music Society - UoP, Ceylon University DramaticSociety Crew Member - "Lullaby" DramaBest Play and Stage Management 2016
	· Sports: University Colors - Hockey 2016/17/18, Hockey, Cricket, and Chess at Trinity college Kandy.

REFERENCES

Prof. R. Ragel
Professor
Department of Computer Engineering
University of Peradeniya, Sri Lanka
+9481 239 3913
roshanr@eng.pdn.ac.lk

Dr. D. Elkaduwa
Senior Lecturer
Department of Computer Engineering
University of Peradeniya, Sri Lanka
+9481 239 3914
dhammika@ce.pdn.ac.lk