ISURI DEVINDI

Department of Computer Engineering,
University of Peradeniya, Sri Lanka

🌐 isuridevindi.github.io
🎓 Google Scholar
✍️ Technical Blog
⌨ github.com/isuridevindi
in /in/isuri-devindi
✉ gaisuridevindi@gmail.com
📞 +94 71 371 3686

My primary research interest lies in developing **low-energy**, **context-aware Human-AI collaborative systems** using **deep learning** and **computer vision** for real-time, adaptive interactions in **healthcare** and everyday environments.

EDUCATION

BSc.Eng (Hons.) in Computer Engineering
University of Peradeniya
2018 Nov - 2023 Dec

GPA: **4.00/4.00**
Class rank: **1/415**
First Class Hons.

G.C.E. Advanced Level Examination
Hillwood College, Kandy
2004 - 2017

Z-Score: **2.2768**
District rank: **6/2784**
National Rank: **113 / 32075**

PUBLICATIONS

[J 3] IEEE Access

Multimodal Deep Convolutional Neural Network Pipeline for AI-Assisted Early Detection of Oral Cancer
Isuri Devindi, Dinura Dissanayake, Sashini Liyanage, Achintha Harshamal, Dhanushki Mapitigama, Nadisha Piyarathne, Kalani Hettiarachchi, Sumudu Rasnayaka, Ruwan Jayasinghe, Roshan Ragel, Isuru Nawinne
Contribution: Conceptualization, Methodology, Software, Validation, Writing - Original Draft, Review & Editing

[J 2] Nature Scientific Reports

A Novel ECG Compression Algorithm Using PWM-Integrated Quantization for Low-Power Real-Time Monitoring
Isuri Devindi, Sashini Liyanage, Titus Jayarathna, Janaka Alawatugoda, Roshan Ragel
Contribution: Conceptualization, Methodology, Software, Validation, Writing - Original Draft, Review & Editing

[J 1] ScienceDirect Oral Oncology

Comprehensive Dataset of Annotated White Light Images of Oral Cavity and Novel Web Tool for Image Annotation
N. S. Piyarathne, S.N. Liyanage, R.M.S.G.K. Rasnayaka, P.V.K.S. Hettiarachchi, **G.A.I. Devindi**, F.B.A.H. Francis, D.M.D.R. Dissanayake, R.A.N.S. Ranasinghe, M.B.D. Pavithya, I. Nawinne, R.G. Ragel, R.D. Jayasinghe
Contribution: Software, Data curation

[C 1] IEEE: Moratuwa Engineering Research Conference 2024

EEG Based Brain-Computer Interface for Inner Speech Classification
Praveen Dhananjaya, Isurika Adikari, Sumudu Lakmali, **Isuri Devindi**, Sashini Liyanage, Mahanama Wickramasingha, Theekshana Dissanayake, Roshan G. Ragel, Isuru Nawinne
Contribution: Writing - Review & Editing, Visualization

[C 2] IEEE: Moratuwa Engineering Research Conference 2024

Self-Paced Brain-Computer Interface on Sensorimotor Rhythms for Controlling Virtual Objects
A.D. Athapattu, P.S.B. Dassanayake, G.S.C. Nanayakkara, S.N. Liyanage, **G.A.I. Devindi**, Roshan G. Ragel, Theekshana Dissanayake, Isuru Nawinne
Contribution: Writing - Review & Editing, Visualization

[C 3] IEEE: Moratuwa Engineering Research Conference 2024

Decoding Non-Motor Imagery Tasks with Non-Invasive EEG Based Brain Computer Interface: A Review
Sumudu Lakmali, Praveen Dhananjaya, Isurika Adikari, **Isuri Devindi**, Sashini Liyanage, Mahanama Wickramasingha, Theekshana Dissanayake, Roshan G. Ragel, Isuru Nawinne
Contribution: Writing - Review & Editing

EXPERIENCE

2024 Jan - Present

Instructor
Department of Computer Engineering, University of Peradeniya, Sri Lanka
Teaching, conducting lab sessions, preparing tutorials, lab specification sheets for courses; Computer Architecture (CO224), Image Processing (CO543), Operating Systems (CO327), Python Programming (CO1010)

2023 Jan - 2023 May

Visiting Research Assistant Supervised by Prof. Archan Misra
Pervasive Sensing & Systems Lab, Singapore Management University
Exploring spatiotemporal compressive sensing techniques for event-based **neuromorphic** vision sensor data fed into and processed by Spiking Neural Networks (View project details).

2021 - 2022

Undergraduate Teaching Assistant
Department of Computer Engineering, University of Peradeniya, Sri Lanka
Supervising and assisting in weekly lab sessions for courses; Embedded Systems (CO321), Data Structures and Algorithms (CO322), Programming and Networking (CO253), Programming Methodology (C language) (CO222)

2021 - Present

Technical Article Writer (Part-time)
Enlear Pvt. Ltd
Writing technical content on computer vision, machine learning, and web development.

ACHIEVEMENTS

2024

Best Paper Award in Biomedical Engineering Track at MERCon 2024
Received the Best Paper Award for the paper **EEG Based Brain-Computer Interface for Inner Speech Classification** in the Biomedical Engineering track at the Moratuwa Engineering Research Conference (MERCon) 2024.

2024

Gold Medal for Excellence in Computer Engineering
Awarded to the student with the highest GPA in the branch of Computer Engineering at the BSc Engineering Programme at the University of Peradeniya (Out of 60)

2024

Award for Engineering Mathematics
Prof. T.D.M.A. Samuel prize awarded for the student with the highest GPA for a minimum of nineteen credits of Engineering Mathematics courses at the University of Peradeniya (Out of 415 students)

2024

Award for Best Industrial Trainee in Computer Engineering in Sri Lanka
Awarded to top final-year engineering undergraduates in Sri Lanka **(out of all state universities)**, based on their performance in 20-week industrial training, evaluated by the Institution of Engineers, Sri Lanka (IESL)

2023

Bronze Award in NBQSA 2023 | National ICT Awards
Bronze award in Tertiary Student Projects (Technology) (Out of 46 teams) for the project "Oral Cavity Image Annotation and Cancer Prediction from White Light Images"

2022

IEEEXtreme 16.0 | 24 hour global algorithmic programming competition
Team Name – bitLasagna, Country Rank – 27, Global Rank – 427
(Out of 14600+ participants)

2022	**ACES Coders V9.0** │ **12 hour national algorithmic programming competition**
	The biggest annual on-ground inter-university 12-hour coding competition in Sri Lanka organized by the University of Peradeniya.
	Team Name – Zblunt, Country Rank – 6 (Out of 100+ teams)

OTHER PROJECTS

2023 Jan - 2023 May	**Efficient Event Stream Compression for Low-Energy Neuromorphic Systems** │ **Individual**
	Under the supervision of Prof. Archan Misra, explored compressive sensing techniques (rate coding, latency coding, delta modulation, event and time window slicing, voxel cubes) to convert event-based neuromorphic vision sensor data into 2D frames for low-energy spiking neural networks (SNNs) and evaluated their impact on classification and object detection performance.
	Technology: snnTorch, PyTorch, Python

2022 Jan - 2022 March	**Reconstructing Highly Degraded License Plates** │ **Group**
	Demonstrated the efficacy of traditional image processing techniques to reconstruct highly degraded license plate images from CCTV footage with unknown degradation sources.
	Contribution: Explored methods such as Otsu thresholding, morphological transformations, contouring, spatial and frequency domain filtering, and Wiener filter-based degradation modeling for reconstruction.
	Technology: Python, OpenCV

2021	**Remote Proctoring System** │ **Group**
	A single device with video streaming facility that integrates the hardware and software components needed to conduct virtual proctoring of an examination in a university.
	Contribution: Designed a scalable web application for administrators and proctors, and developed the hardware solution using a Raspberry Pi.
	Technology: React.js, Express.js, MongoDB, Node.js

EXTRA-CURRICULAR ACTIVITIES & LEADERSHIPS HELD

2020 - 2024	**Member of the Web Consultation team of University of Peradeniya**
	Group focused on improving university's digital presence
2023	**Committee member of the Association of Computer Engineering Students (ACES) of the University of Peradeniya**
	Contributed to the team that designed algorithmic programming questions for the ACES Coders v10.0 competition.
2022 - 2023	**Secretary of IET on Campus of the University of Peradeniya**
2021 - 2022	**President of the Music Society of the University of Peradeniya**
2022 - Present	**Compère/ Speaker at various events at the University of Peradeniya**

REFERENCES

Prof. Roshan G. Ragel │ roshanr@eng.pdn.ac.lk
Head of Department, Department of Computer Engineering, Faculty of Engineering, University of Peradeniya, Sri Lanka
Dr. Isuru Nawinne │ isurunawinne@eng.pdn.ac.lk
Senior Lecturer, Department of Computer Engineering, Faculty of Engineering, University of Peradeniya, Sri Lanka
Prof. Archan Misra │ archanm@smu.edu.sg
Vice Provost (Research), School of Computing & Information Systems, Singapore Management University, Singapore