JATHURSHAN PRADEEPKUMAR

+1-617-870-1913 , jathurshanpradeepkumar@gmail.com, jathurshanpradeepkumar@fas.harvard.edu.

https://jathurshan0330.github.io, 🎓 in

RESEARCH INTERESTS

Cancer	Interpretable ML	Computational Medicine	Deep Learning
AI for Health	Cancer Genomics	Computational Imaging	Computational Biology

RESEARCH EXPERIENCE

The Center for Advanced Imaging, Harvard University *July 2022 - Present*
Post-Baccalaureate Fellow
Advisors: Dr. Dushan Wadduwage and Dr. Sergey Ovchinnikov.

The Center for Advanced Imaging, Harvard University *Sept 2021 - June 2022*
Remote Visiting Undergraduate Research Fellow
Advisor: Dr. Dushan Wadduwage.

Biomedical Research Group, University of Moratuwa, Sri Lanka *June 2021 - July 2022*
Undergraduate Thesis Research Student
Advisors: Dr. Anjula C. De Silva and Dr. Chamira Edussooriya.
External Collaborator: Dr. Simon L. Kappel.

University of Melbourne, Australia *Nov 2020 - Dec 2021*
Remote Research Internship
Advisor: Dr. Sam John

Trainee Research Engineer - Internship *Oct 2020 - Mar 2021*
Synergen Technology Labs (Pvt) Ltd, Sri Lanka

Biomedical Research and Innovation Collective (theBRIC) *Oct 2020 - June 2022*
Part-time Researcher - BraiNeoCare project.

EDUCATION

University of Moratuwa, Sri Lanka *2018 - 2022*
CGPA : **3.97**/4.2 (First Class Honours)
B.Sc Engineering (Hons) in Biomedical Engineering

PUBLICATIONS

Preprints:

- **Pradeepkumar, Jathurshan***, M. Anandakumar*, V. Kugathasan, D. Suntharalingham, S. L. Kappel, A. C. De Silva, and C. U. Edussooriya, **"Towards interpretable sleep stage classification using cross-modal transformers,"** arXiv. (*Under Review at IEEE Journal of Biomedical and Health Informatics (Impact Factor: 7.41)*)[paper] [code]

- M. Anandakumar*, **Pradeepkumar, Jathurshan***, S. L. Kappel, C. U. Edussooriya, and A. C. De Silva, **"A knowledge distillation framework for enhancing ear-EEG based sleep staging with scalp-EEG data,"** arXiv. (*Under Review at ICASSP 2023*)[paper] [code]

- **Pradeepkumar, Jathurshan***, M. Anandakumar*, V. Kugathasan*, A. Seeber, and D. N. Wadduwage, **"Physics augmented u-net: A high-frequency aware generative prior for microscopy,"** bioRxiv. [paper]

Peer-reviewed Conference Papers:

- M. Afham*, U. Haputhanthri*, **Pradeepkumar, Jathurshan***, M. Anandakumar, A. De Silva, and C. U. Edussooriya, **"Towards accurate cross-domain in-bed human pose estimation,"** in IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP). pp. 2664–2668.[paper][code]

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*These authors contributed equally to the work.

- **Pradeepkumar, Jathurshan,** M. Anandakumar, V. Kugathasan, T. D. Lalitharatne, A. C. De Silva, and S. L. Kappel, **"Decoding of hand gestures from electrocorticography with lstm based deep neural network,"** in 43rd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC). pp. 420–423.[paper][slides]

Theses:

- **Pradeepkumar, Jathurshan,** M. Anandakumar, V. Kugathasan, and D. Suntharalingham, **"Interpretable Multi-Modal Sleep Monitoring System using Ear-EEG and EOG."** *Undergraduate Graduation Project Report, University of Moratuwa, Sri Lanka.*
  Grade : 4.2/4.2.[thesis]

HONORS AND AWARDS (SELECTED)

First Class (Honours) - (GPA above 3.7)	*2022*
Dean's List for 7 semesters	*2022*
Second-Runners up at Video and Image Processing Cup (International)	*2021*
- International Conference on Image Processing (ICIP), Anchorage, Alaska, USA.	
IEEE SMC Winners at BR4IN.IO Hackathon (International)	*2020*
- IEEE System, Man and Cybernetics Conference,Toronto, Ontario, Canada.	
Mahapola Merit Scholarship for best performance in university entrance examinations	*2017*
CASS Student Design Competition (Selected to the regional level)	*2020-2021*
Champions of Brainstorm (National Biomedical Design Competition)	*2019*
Champions of SLIoT Competition (National IoT Design Competition)	*2019*
Champions of Moraventures 5.0(National)	*2019*
Runners-up in IEEE Innovation Nation and HackX Competitions(National)	*2019*
Second Runners-up at Datastorm v2 (National Data science Competition)	*2021*
Bronze Medal at National Physics Olympiad	*2016*

TALKS AND PROFESSIONAL SERVICE ACTIVITIES

Served as a reviewer at ECCV (L2ID workshop) 2022 and ICASSP 2023	
Invited talk on my thesis project at Center for ear-EEG Aarhus University, Denmark.	*2022 .*
Presented my thesis project at CCAIM summer school.(link)	*2022*
Workshops on healthcare research and light field processing	*2021*
- IEEE EMBS International Student Conference	

LEADERSHIP AND VOLUNTEERING ACTIVITIES

Teaching Assistant	*2022*
EN1802 Basic Electronics, EN2550 Fundamentals of Image Processing and Machine Vision, EN3900 Seminar	
Project Mentor - Spark Challenge	*2022*
Mentored an undergraduate team at the spark challenge competition.	
IEEE Engineering in Medicine & Biology Student Chapter	*2019-2022*
Council Member(2021/22), Secretary (2020/21), Assistant Treasurer (2019/20)	
Event Coordinator - IEEE Signal Processing Society Student Chapter	*2020-2021*
Student Representative of Biomedical Engineering Department	*2018-2019*
IEEE Signal Processing Society Student Chapter	
Event Coordinator	*2020-2021*
Electronic Club at University of Moratuwa, Sri Lanka	
Committee member	*2018-2019*
Karate	
Member of National Karate Senior Pool	*2017-2019*
International 1st Dan Black belt holder	*2015*
University Colors for Karate	*2018-2019*

References available upon request