

# MITHUNJHA ANANDAKUMAR

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## RESEARCH INTERESTS

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Computational imaging

Machine learning and deep learning

Biomedical imaging

## EDUCATION

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### PhD in Bioengineering

*Aug 2023 - Present*

*Advisor : Prof. Fan Lam*

The Grainger College of Engineering,  
University of Illinois, Urbana Champaign, USA  
Current Cumulative GPA : **4.0/4.0**

### BSc. Engineering (Honors) in Biomedical Engineering

*Aug 2017 - July 2022*

Department of Electronic and Telecommunication Engineering,  
University of Moratuwa, Sri Lanka.  
Cumulative GPA : **3.98/4.2**

## RESEARCH EXPERIENCE

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**Beckman Institute for Advanced Science and Technology,  
University of Illinois Urbana Champaign, USA**

*Aug 2023 - Present*

*Graduate Research Assistant*

**Faculty of Arts and Sciences, Harvard University, USA**

*July 2022 - June 2023*

*Post baccalaureate fellow*

**The Center for Advanced Imaging, Harvard University, USA**

*Sept 2021 - June 2022*

*Remote undergraduate researcher*

**Biomedical Research Group, University of Moratuwa, Sri Lanka**

*June 2021 - July 2022*

*Undergraduate thesis research student*

**Zone 24x7 (Pvt) Ltd, Sri Lanka**

*Oct 2020 - Mar 2021*

*Trainee associate research engineer*

**Centre for Biomedical Innovation, University of Moratuwa, Sri Lanka**

*July 2019*

*Research assistant intern*

## PUBLICATIONS

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### Journals

- **M. Anandakumar**, T. J. Trinklein, J. V. Sweedler, F. Lam, “Integrating model-based reconstruction and deep learning for accelerating mass spectrometry imaging”, Under Review.
- J. Pradeepkumar\*, **M. Anandakumar\***, V. Kugathanan, D. Suntharalingham, S. L. Kappel, A. C. De Silva, and C. U. S. Edussooriya. “Toward interpretable sleep stage classification using cross-modal transformers.”, in IEEE Transactions on Neural Systems and Rehabilitation Engineering, vol. 32, pp. 2893-2904, 2024. [[Paper](#)] [[Code](#)]

- N. Wijethilake\*, **M. Anandakumar\***, C. Zheng, P. T. C. So, M. Yildirim and D. N. Wadduwage, “DEEP-squared: deep learning powered de-scattering with excitation patterning” *Light: Science & Applications*, 12, 228, 2023. [[Paper](#)] [[Code](#)]

### Conference papers/ abstracts

- **M. Anandakumar**, T. J. Trinklein, J. V. Sweedler, F. Lam, Integrating model-based reconstruction and deep learning for accelerating mass spectrometry imaging, 73<sup>rd</sup> ASMS Conference on Mass Spectrometry and Allied Topics, Baltimore, Maryland, June 1-5, 2025 (Oral presentation).
- **M. Anandakumar\***, J. Pradeepkumar\*, S. L. Kappel, C. U. S. Edussooriya, and A. C. De Silva. “A knowledge distillation framework for enhancing ear-EEG based sleep staging with scalp-EEG data”, *IEEE Conference on Systems, Man, and Cybernetics*, 2023. [[Paper](#)] [[Code](#)]
- M. Afham\*, U. Haputhanthri\*, J. pradeepkumar\*, **M. Anandakumar**, A. De Silva and C. U. S. Edussooriya “Toward accurate cross-domain in-bed Human pose estimation”, In *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp. 2664-2668, 2022. [[Paper](#)]
- J. Pradeepkumar, **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 *Proceedings of International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), 2021* [[Paper](#)]

### Theses

- **M. Anandakumar**, J. Pradeepkumar, D. Suntharalingham, V. Kugathasan, S. L. Kappel, C. U. S. Edussooriya, and A. C. De Silva. “Interpretable multi-modal sleep monitoring system using ear-EEG and EOG”, 2022. [[Thesis](#)]

\* denotes joint lead authors.

## HONORS AND AWARDS

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2023 - 2025 : Awarded [Illinois Distinguished Fellowship](#)

2021 : Second runner-up at video and image processing cup at IEEE international conference on image processing (ICIP) conference.

2020 : IEEE SMC winners at BR41N.IO hackathon at IEEE system, man, cybernetics (SMC) conference.

2017 : Mahapola Merit Scholarship for best performance in the nationwide university entrance examination.

## PROFESSIONAL SERVICES AND VOLUNTEERING

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### Served as peer reviewer

2025 : IEEE International Conference on Systems, Man, and Cybernetics (SMC)

2023 : IEEE Journal of Biomedical and Health Informatics

2022 : ECCV - L2ID workshop

### Teaching experience

2022 Spring : EN2550 Fundamentals of image processing and machine vision, University of Moratuwa.

2022 Spring : EN3900 Seminar, University of Moratuwa.

2024 Spring : Workshop on computational image processing, Biophotonics summer school, CLIMB, University of Illinois Urbana Champaign.

### IEEE Engineering in Medicine and Biology Student Chapter at University of Moratuwa

2021/22 : Council member

2020/21 : Editor

2019/20 : Education director