Anirudh Bindiganavale Harish

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Education

- **Rice University** — Houston, USA
  Doctor of Philosophy, Electrical and Computer Engineering — *August 2023 – Present*
  - Cumulative GPA: 3.95/4.
  - Teaching Assistant: Computational Photography (Fall 2024, Fall 2025)

- **University of California, Los Angeles** — Los Angeles, USA
  Master of Science, Electrical and Computer Engineering — *September 2021 – June 2023*
  - Cumulative GPA: 4/4.
  - Teaching Assistant: Introduction to Programming (Winter 2022, Spring 2023, Fall 2023, Winter 2023), Python with Applications (Winter 2023, Spring 2023).

- **National Institute of Technology Karnataka, Surathkal** — Surathkal, India
  Bachelor of Technology, Electronics and Communication Engineering — *July 2016 – June 2020*
  - Cumulative GPA: 9.62/10.

Publications

- **Harish, A. B.***, Guo, P.*, Ghanekar, B.†, Gupta, D.†, Rajavenkatanarayan, A., Sharma, M. K., August, M. E., Sano, A., and Veeraraghavan, A. (2025). CogPhys: Assessing cognitive load via multimodal remote and contact-based physiological sensing. In Proceedings of the Neural Information Processing Systems Track on Datasets and Benchmarks

- Chari, P.*, **Harish, A.B.***, Armouti, A., Vilesov, A., Sarda, S., Jalilian, L. and Kadambi, A., 2024, September. Implicit neural models to extract heart rate from video. In European conference on computer vision (pp. 157-175). Cham: Springer Nature Switzerland.

- Del Regno, K., Vilesov, A., Armouti, A., **Harish, A.B.**, Can, S.E., Kita, A. and Kadambi, A., 2024. Thermal imaging and radar for remote sleep monitoring of breathing and apnea. arXiv preprint arXiv:2407.11936.

- Vilesov, A.*, Chari, P.*, Armouti, A.*, **Harish, A.B.**, Kulkarni, K., Deoghare, A., Jalilian, L. and Kadambi, A., 2022. Blending camera and 77 GHz radar sensing for equitable, robust plethysmography. ACM Trans. Graph., 41(4), pp.36-1.

- **Harish, A.B.** and Sadat, F., 2020, April. Trimodal attention module for multimodal sentiment analysis (student abstract). In Proceedings of the AAAI Conference on Artificial Intelligence (Vol. 34, No. 10, pp. 13803-13804).

Experience

- **Rice Computational Imaging Lab** — Houston, USA
  Graduate Research Student. Supervisor : Prof. Ashok Veeraraghavan — *September 2023 - Present*
  - Created a **multimodal sensing stack** for the **remote physiological sensing and cognitive load estimation**. Included sensors - Radar, RGB Stereo, NIR and Thermal cameras
  - Collected and benchmarked the first-of-its-kind dataset, **CogPhys**, for remote cognitive load estimation via remote vital sign extraction **[NeurIPS 2025]**. Links for the **website** and **code**.
  - Working on **blood flow imaging** via laser speckle imaging for peripheral arterial disease.
  - Working on **cross-modal medical segmentation** algorithms.

- **UCLA VMG Lab** — Los Angeles, USA
  Graduate Research Student. Supervisor : Prof. Achuta Kadambi & Dr. Laleh Jalilian — *September 2021 - June 2023*
  - Worked on **equitable vital sensing** for remote plethysmography with a **camera + radar** setup **[Siggraph 2022]**. Code can be found **here**.
  - Open-sourced a C++ repository for **multi-threaded data-acquisition** from a **multimodal perceptual sensor stack**. List of supported sensors can be found **here** .
  - Developing fast **neural representations** models for the human physiology **[ECCV 2024]**.
- **UCLA Health** — Los Angeles, USA
  Graduate Research Student. Supervisor : Dr. Ashley Kita — *September 2021 - June 2023*
  - Co-designed a **low-light sensor stack** for **prolonged** ($\sim$ 6 hrs) acquisition. **Link** to sensor list.
  - Designed the **synchronization circuit** to **align** ground truth Polysomnogram data with the sensor data.
  - Developed vision models for low-light remote vital sensing applied to **apnea detection [ArXiv]**.
- **Qualcomm** — San Diego, USA
  Engineering Intern. Team : Camera Quality Evaluation — *June 2022 - September 2022*
  - Worked on **gaze redirection** for video conferencing applications.
  - Worked on streamlining the pipeline for data acquisition, calibration, and processing.
  - Worked on developing **quality centric protocols** to evaluate the quality of redirection algorithms.
- **Microsoft Research** — Bangalore, India
  Research Intern. Supervisors : Dr. Harsha Vardhan Simhadri & Dr. Prateek Jain — *September 2020 - July 2021*
  - Developed speech recognition algorithms for **keyword spotting** and **basic command recognition** on **resource constrained devices**.
  - Our final model was under **1MB** and can be **re-trained** on new keywords with only TTS samples.
  - Implemented cache-optimized **neural network layers** and **matrix operations in C** for execution on low-resource devices.

Mentorship Experience

- **Rice University:** *Driver state sensing*
  1. **Diya Gupta** *(Spring 2024 - Present)*
- **PATHS-UP (Summer 2024):** *Monitoring respiratory signals from contact and non-contact Sensors*
  1. **Maritza Apolinar** *(Texas A&M)*
  2. **Tahlia Lamour** *(Washington University in St. Louis)*
  3. **Megan MacLeay** *(Texas A&M)*
  4. **Henry Vo** *(California State University)*
- **UCLA:** *Remote sleep monitoring of apnea*
  1. **Jianchong (Devin) Ma** *(now - Stanford University, MS Student)*
  2. **Zoe (Rui) Ma** *(now - Columbia University, MS Student)*

Scholarships and Awards

- Awarded a research scholarship at UCLA for my contribution to the research at the VMG Lab.
- Awarded the **MITACS Globalink Research Scholarship 2019** to pursue research in Canada.
- Awarded an academic scholarship at NITK for consistently ranking in the top 5 of the ECE Department.