Shreyas Krishnan

Research Assistant, Data Innovation & AI Lab, UC Berkeley

[shreyas21447@gmail.com](mailto:shreyas21447@gmail.com) — [f20200714@goa.bits-pilani.ac.in](mailto:f20200714@goa.bits-pilani.ac.in) — [linkedin.com/in/shreyas-krishnan-579989212](https://www.linkedin.com/in/shreyas-krishnan-579989212/)

# RESEARCH INTERESTS

Large language model evaluation , data selection & Gradient-Informed training , neuro+ML for language (iEEG), efficient training/benchmarking at scale, vision & affective computing.

# EDUCATION

**Birla Institute of Technology & Science (BITS) Pilani, Goa**, India Aug 2020 – Aug 2025

B.E. Electronics & Communication Engineering & M.Sc. Mathematics (Dual Degree); Minor in Data Science

**Thesis Title:** *Beyond modalities: robust neural representation of language in the brain*. [Link](https://klab.tch.harvard.edu/publications/Publications_Theses.html)

# ACADEMIC EXPERIENCE

**UC Berkeley – Data Innovation and AI Lab** Berkeley, California, USA

*Research Assistant* Aug 2025 – Present

* Ongoing Research on how access to pirated books (Books3 dataset) shapes large language model performance, using a novel “name cloze” evaluation across 12,000+ books and causal identification based on publication-year variation.. [NBER Working Paper 33598.](http://www.nber.org/papers/w33598) Advisor: **Dr. Abhishek Nagaraj**.

**Harvard University – Kreiman Lab** Boston, Massachusetts, USA

*Research Intern (Neuro-AI)* Jan 2024 – Aug 2025

* Analyzed intracranial iEEG during language tasks; trained ML decoders for grammatical/semantic features; mapped region-specific effects.
* Co-designed an LLM-based real-time memory retrieval system; evaluated Gemini 2.5, GPT-o3, Leta, Zep; built bench- marking/eval pipeline.
* Manuscripts: Nature (final edits); NeurIPS 2025 submission (preprint linked below). Advisor: **Dr. Gabriel Kreiman**.

## Nanyang Technological University (NTU) Singapore

*Research Intern (EEG/ML & Vision)* Oct 2022 – May 2024

* EEG emotion recognition with ResNet/hybrid models: mean accuracy 99.34% (DREAMER), 92.18% (DEAP); first- author IET book chapter.
* Vision Transformer for remote hand-raise detection; 93*.*82% ± 2*.*16% (5-fold CV); accepted to IEEE CIACON 2025.
* Advisors: **Dr. Amalin Prince**, **Dr. Yuvaraj Rajamanickam**.

**National Institute of Advanced Studies (NIAS)** Bangalore, India

*Research Intern (Model Compression)* May 2023 – Present

* Developed Granger-causality-guided pruning for interpretability and efficiency; first-author IJSCAI 2025 paper. Advisor:

## Dr. Snehanshu Saha.

**Indian Institute of Technology Madras** Chennai, India

*Research Intern (Detection/Segmentation)* Jun 2023 – Aug 2023

* Implemented FAIR-style architectures for object detection and instance segmentation; ran ablations and analysis. Ad- visor: **Dr. Ganapathy Krishnamurthy**.

**OnFinance AI** Bangalore, India

*AI Engineer Intern (LLM/RAG)* May 2024 – Aug 2024

* Fine-tuned LLaMA 3 and VLMs for financial analysis; OCR-based extraction & automated report generation with RAG; improved citation quality.

# PUBLICATIONS

## Journal & Conference

* **S. Krishnan**, L.Murugan, A. Hassouneh,Y. Rajamanickam, A. Prince, T. Thiyagasundaram, M. Murugappan (2024).

*Emotion Recognition using ResNet Feature Extraction on EEG Signals*. IET (UK), Book Chapter. [DOI](https://doi.org/10.1049/PBHE056E_ch1) — [print](https://drive.google.com/file/d/1P_c2sdwix7gb4zEip7kXa9dpnQrpAAET/view?usp=sharing)

* **S. Krishnan** (2025). *Vision Transformer for Hand-Raise Recognition in Remote Learning* (93*.*82% ± 2*.*16%, 5-fold CV). IEEE CIACON 2025. [print](https://drive.google.com/file/d/17EsKI99nexwI0IRmhUDE0p4kRCbpplAE/view?usp=sharing)
* **S. Krishnan**, A. Das (2025). *Harnessing Chaos and Causality in Neural Networks: A Pruning Strategy for Enhanced Performance and Explainability*. IJSCAI 2025. [print](https://drive.google.com/file/d/1vUTmcQxy4MyT9sApzhch0Ic2o0ZmkBiw/view?usp=sharing)
* **S. Krishnan**, A.Thamma. *Human-Prior Correction: Post-hoc Calibration that Aligns Vision Models with Human Uncertainty*. Accepted at ICCV - HiCV Workshop 2025. Under Review ICLR 2026

## Preprints / Under Review

* **S. Krishnan**, A. Thamma (2025). *Plan–Check–Revise: A Token-Paritized Two-Agent Protocol for Verifiable Math Reasoning*. Submitted to NeurIPS 2025 Workshop MATHAI.
* **S. Krishnan**, A. Thamma (2025). *Hallucination Guardrails for VLM Instructions: Sensor–Language Conflict Detection for Safer Human–Robot Interaction*. Submitted to IEEE IROS 2025 Workshop HEAI.
* S. Madan, **S. Krishnan**, G. Kreiman (2025). *Real-time Memory Retrieval with LLMs: Benchmarking Context Surfacing*. under review (NeurIPS 2025). [preprint](https://drive.google.com/file/d/1PQPIRl56EdU1B-kvPxZWCYuzNp6ttm3b/view?usp=drive_link)
* D. Mayo,C.Zhang **S. Krishnan**, A.Shaw, B. Katz, A.Barbu, B.Cheung (supervision) . *Look But Don’t Touch: Gradient Informed Selection Training*. Under Review ICLR 2026

# SELECTED COURSES

## Advanced/Graduate-level Topics Undergraduate Core

* + Machine Learning (Course Rep, BITS-F464, Aug–Dec 2023)
  + Optimization
  + Statistical Inference & Applied Statistical Methods
  + Foundations of Data Science
  + Linear Algebra; Probability & Statistics; Numerical Analysis
  + Digital Signal Processing (DSP)
  + Multivariate Calculus; Ordinary Differential Equations
  + Discrete Mathematics; Control Systems

# AWARDS & DISTINCTIONS

**Center for Brains, Minds and Machines, Massachusetts Institute of Technology** Woods Hole, MA Selected (fully funded) among ∼30 global graduate students/postdocs worldwide for a deep-dive course on the science of

|  |  |  |
| --- | --- | --- |
| intelligence. |  | Aug 2025 |
| **NTU CCDS PhD Offer**  Admitted to the PhD program (offer with service bond). |  | Singapore  2024 |
| **Carnegie Mellon University MS Admit** | Pittsburgh, USA | 2024 |
| **OTHER EXPERIENCES** |  |  |
| **Course Representative**, Machine Learning (BITS-F464) |  | Aug 2023 – Dec 2023 |

* + Coordinated lectures/labs; liaised on assignments and grading logistics.

**Student Clubs & OSS** 2022 – 2024

* + Society of AI & Deep Learning (SAiDL): mixup on TREC [(GitHub)](https://github.com/sk160902/SAiDL-Spring-Assignment-2022)
  + Electronics & Robotics Club: ROS path planning (Dijkstra) [(GitHub)](https://github.com/sk160902/ERC-hackathon-assignment)

# SKILLS

* + **Programming:** Python, MATLAB, C/C++, JavaScript
  + **ML/Tools:** PyTorch, TensorFlow, scikit-learn, OpenCV, Pandas/NumPy, Linux, Git, Weights & Biases, basic dis- tributed training
  + **NLP/Systems:** OCR pipelines, RAG, LLM fine-tuning/eval; iEEG/EEG processing
  + **Design:** Adobe Illustrator, Inkscape, Photoshop

# REFERENCES

Available upon request. (Letters: Dr. Gabriel Kreiman : [gabriel.kreiman@tch.harvard.edu,](mailto:gabriel.kreiman@tch.harvard.edu) Dr. Hanspeter Pfister : [pfister-admin@seas.harvard.edu)](mailto:pfister-admin@seas.harvard.edu)

2