AKSHAT GUPTA
CS PhD, UC Berkeley

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SUMMARY

I'm a second year PhD Student at UC Berkeley affiliated with BAIR. I'm currently working on interpretability with a focus on creating more efficient and interpretable AI.

SKILLS

Languages: Python, Go, MATLAB, C++, Javascript, C
Tools: Pytorch, Huggingface, NLTK, Spacy
Technologies: AWS, GCP, Azure, Dialogflow, Docker

EDUCATION

8/2023 - Present	**PhD, Computer Science** Advisor : Gopala Anumanchipalli	**University of California, Berkeley**
1/2020 - 5/2021	**MS, Electrical and Computer Engineering** Advisor : Alan W Black	**Carnegie Mellon University**
10/2017 - 3/2020	**MS, Applied and Engineering Physics** Thesis Advisor : Gregory Eyink (Johns Hopkins University)	**Technical University of Munich, Germany**
8/2013 - 6/2017	**B.Tech, Electrical Engineering** Thesis Advisor : Renu Rameshan	**Indian Institute of Technology Mandi**

EXPERIENCE

6/2021 – 8/2023   **Senior Associate, AI Research**   **JPMorgan Chase**
- Developed relation extraction models for financial knowledge graphs, resulting in a SIGIR 2023 paper [9] and a patent [3]
- Led the design and deployment of solutions for public information discovery, enabling insights into companies and financial institutions, resulting in a patent [1]
- Supervised a summer intern and mentored student teams from Columbia University and Carnegie Mellon University on sponsored capstone projects, fostering collaborative research and development

9/2018 – 6/2019   **Visiting Research Scholar**   **Johns Hopkins**
- Implemented stochastic differential equations (SDE) to study to run large-scale turbulence simulation on Hopkins Cluster (MARCC)
- Investigated resultant vorticity dynamics in turbulent channel flows under Lagrangian Dynmaics
- Resulted in 2 publications [13, 14] in Journal of Fluid Mechanics, the #1 journal in the field

PUBLICATIONS

1. **How Linearly Associative are Memories in Large Language Models?**
   Akshat Gupta, Nehal Sindhu, Gopala Anumanchipalli
   <u>Oral Presentation</u>, ICLR 2025 Workshop (New Frontiers in Associative Memories)

2. **Norm Growth and Stability Challenges in Localized Sequential Knowledge Editing**
   Akshat Gupta, Christine Fang, Atahan Ozdemir, Maochuan Lu, Ahmed Alaa, Thomas Hartvigsen, Gopala Anumanchipalli
   KnowFM @ AAAI 2025 (<u>Outstanding Paper Award</u>)

3. **Sylber: Syllabic Embedding Representation of Speech from Raw Audio**
   Cheol Jun Cho, Nicholas Lee, **Akshat Gupta**, Dhruv Agarwal, Ethan Chen, Alan Black, Gopala Anumanchipalli
   ICLR 2025

4. **PokerBench : Training Large Language Models to become Professional Poker Players**
   Richard Zhuang, **Akshat Gupta**, Richard Yang, Aniket Rahane, Zhengyu Li, Gopala Anumanchipalli
   AAAI 2025

5. **Rebuilding ROME : Resolving Model Collapse during Sequential Model Editing**
   Akshat Gupta, Sidharth Baskaran, Gopala Anumanchipalli
   EMNLP 2024

6. **A Unified Framework for Model Editing**
   Akshat Gupta, Dev Sajnani, Gopala Anumanchipalli
   EMNLP 2024 Findings

7. **Model Editing at Scale leads to Gradual and Catastrophic Forgetting**
   Akshat Gupta, Anurag Rao, Gopala Anumanchipalli
   ACL 2024 Findings

8. **Self-Assessment Tests are Unreliable Measures of LLM Personality**
   Akshat Gupta, Xiaoyang Song, Gopala Anumanchipalli
   BlackboxNLP 2024, co-located with EMNLP 2024

9. **REFinD: Relation Extraction Financial Dataset**
   Simerjeet Kaur, Charese Smiley, **Akshat Gupta**, Joy Sain, Dongsheng Wang, Toyin Aguda, Sameena Shah
   SIGIR 2023

10. **Probing Quantifier Comprehension in Large Language Models: Another Example of Inverse Scaling**
    Akshat Gupta
    BlackboxNLP 2023, co-located with EMNLP 2023

11. **Intent classification using pre-trained language agnostic embeddings for low resource languages**
    Hemant Yadav, **Akshat Gupta**, Sai Krishna Rallabandi, Alan W Black, Rajiv Ratn Shah
    Interspeech 2022

12. **Acoustics Based Intent Recognition Using Discovered Phonetic Units for Low Resource Languages**
    Akshat Gupta, Sai Krishna Rallabandi, Alan W Black
    ICASSP 2021

13. **Stochastic Lagrangian dynamics of vorticity. Part 1. General theory for viscous, incompressible fluids**
    Gregory Eyink, **Akshat Gupta**, Tamer Zaki
    Journal of Fluid Mechanics, 2020 (Volume 901, Page A2)

14. **Stochastic Lagrangian dynamics of vorticity. Part 2. Application to near-wall channel-flow turbulence**
    Gregory Eyink, **Akshat Gupta**, Tamer Zaki
    Journal of Fluid Mechanics, 2020 (Volume 901, Page A3)

PATENTS

1. **Method and system for automated public information discovery**
   Akshat Gupta, Simerjot Kaur, Xiaomo Liu, Armineh Nourbakhsh, Andrea Stefanucci, Alex Woodgate, Sameena Shah
   US Patent 12,001,491

2. **Method and system for detection of anomalous rejections of foreign exchange requests**
   Nacho Navarro, Xiaomo Liu, Simran Lamba, **Akshat Gupta**, Sameena Shah
   US Patent App. 18/085,104

3. **Method and system for understanding financial documents**
   Simerjot Kaur, Charese Smiley, Joy Sain, Suchetha Siddagangappa, **Akshat Gupta**, Sameena Shah
   US Patent App. 17/647,356

AWARDS
- Outstanding Paper Award, KnowFM Workshop @ AAAI 2025 [2]
- NVIDIA Compute Grant of 16,000 GPU hours for A100 GPUs (80GB) on the topic - "Enhancing Post-training Editability via Knowledge Modularization"
- Student Travel Grant, BlackboxNLP 2024, co-located with EMNLP 2024
- UC Berkeley EECS Fellowship, 2023
- Best Undergraduate Thesis, IIT Mandi 2017 [Topic - Blind Image Deconvolution]

ACADEMIC SERVICE

Reviewing
- ICLR 2025, ICML 2025, COLM 2025
- ACL Rolling Review : June 2024, August 2024, October 2024, December 2024
- ACL 2023
- EMNLP 2022

Workshop Organization
- 4th Workshop on Knowledge Discovery from Unstructured Data in Financial Services, SIGIR 2023

ADVISING
- Maochuan Lu, Undergraduate UC Berkeley, Published [2]   2024 - Present
- Richard Zhuang, Undergraduate UC Berkeley, Published [4]   2024 - Present
- Dev Sajnani, Undergraduate UC Berkeley, Published [6]   2024
- Anurag Rao, Undergraduate UC Berkeley (–> MS, University of Oxford), Published [7]   2023 - 2024
- Xiaoyang Song, MS Columbia University (–> PhD, University of Michigan), Published [8]   2023
- Anant Singh, MS NYU (–> Machine Learning Engineer, Apple)   2022 - 2023