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RESEARCH INTERESTS

I focus on natural language processing applications, particularly developing minimal-intervention approaches to enhance LLM utility and performance. My recent contributions include [prompt lookup decoding](#), a novel method for accelerating autoregressive LLM inference through prompt token speculation, and [LLM-based attribution](#), which leverages model internals for document grounding rather than external verification systems. This attribution work has been successfully integrated into Adobe's Acrobat AI assistant for enhanced grounding capabilities.

During my postgraduate research at IISc, I specialized in Knowledge Graph Question Answering, developing solutions using knowledge graph embeddings to improve semantic understanding and query resolution.

As an undergraduate, I contributed to "Acyut," a Government of India sponsored initiative that produced India's first humanoid robot, where I gained foundational experience in robotics and AI system integration.

EDUCATION

Indian Institute of Science

Bangalore

Ph.D., Computational and Data Sciences.

Thesis: [Leveraging KG Embeddings for Knowledge Graph Question Answering](#)

2018–2022

Birla Institute of Technology and Science (BITS), Pilani

Pilani

B.E. (Hons.) Computer Science, Grade: 8.6

2011–2015

EXPERIENCE

Adobe Research

Bangalore

Research Scientist II

2022 - Present

- Part of the document experiences lab, where we develop technologies to further AI capabilities across Adobe products.
- Worked on several research projects and led them to shipping, most notable being accurate attribution for contract insights.
- 12+ patents filed, published in major NLP conferences

Google

Hyderabad

Software Engineer 3

May 2016–March 2017

- I worked in the Apps for Work team (now re-branded as Google Workspace) as Software Engineer (Tools & Infrastructure) for the Permissions Management mobile app
- Developed and maintained automation tools to increase tester productivity and reduce turnaround time

Paypal

Chennai

Software Engineer 1

July 2015–November 2015

- As part of the Reporting team at PayPal, I worked on migrating mid-tier Java services to a new framework
- My work here involved working with Java Enterprise Edition and PayPal's relational databases

Flipkart

Bangalore

PS 2 Intern

January 2015–June 2015

- Worked in the E-kart team at Flipkart and developed the UI for a Master Data Management system
- The UI was developed using Angular and Node.js framework and deployed in production

Bhabha Atomic Research Centre




Summer Intern

Mumbai

Summer 2013

- Did a chemical analysis project titled “Ascertaining bubble size distribution in immiscible liquid flows”
- Developed image processing techniques to measure bubble size distribution and their generation frequency





SELECTED PUBLICATIONS

1. **A. Saxena**, “Prompt Lookup Decoding: Speculative n-gram-based Decoding for LLMs”, 2023. 
2. A. Phukan, S. Somasundaram, **A. Saxena**, K. Goswami, and B.V. Srinivasan, “[Peering into the Mind of Language Models: An Approach for Attribution in Contextual Question Answering](#)”, *Proceedings of the 62nd Annual Meeting of the Association for Computational Linguistics (ACL)*, 2024
3. **A. Saxena**, A. Kochsiek, and R. Gemulla, “[Sequence-to-Sequence Knowledge Graph Completion and Question Answering](#)”, *Accepted to the 60th Annual Meeting of the Association for Computational Linguistics, 2022*. 
4. **A. Saxena**, A. Tripathi, and P. Talukdar, “[Improving Multi-hop Question Answering over Knowledge Graphs using Knowledge Base Embeddings](#)”, *Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics, 2020*. 

SCHOLARSHIPS AND AWARDS

- Recipient of Intel India PhD Fellowship 2018–Present
- Represented India and stood 4th in Teen-size league at Robocup 2013 held in the Netherlands 2013
- 1st runner-up in image processing and robotics events at Techfest 2013 and 2014, IIT Bombay 2013-2014
- 1st position in DesertHack 2012, BITS Pilani, for application Kiri  2012
- Awarded BITS merit scholarship for semesters 1-4 for being in the top 1% of current batch 2011–2013
- Secured rank 2,423 in IIT-JEE (top 0.49%), rank 301 in AIEEE (top 0.05%) 2011

EXTRACURRICULAR PROJECTS

- **3D Printing Store: Everything 3D**   2023–present
Founder and designer at Everything 3D — a custom 3D printing store offering personalized fridge magnets, desk signs, house nameplates, and more. Showcased creations and engaged with customers via store and Instagram.
- **Humanoid Robot Soccer**  2011–2015
Member of team Acyut, which is a humanoid robotics project sponsored by Department of Electronics and Information Technology, Government of India. Represented India in Robocup 2013.
- **Pediatric Practice Management Solution**  2012–Present
Wrote an open source PHP solution for pediatric practice management that has been in active use since 2013.

SKILLS

- **Machine Learning Tools:** PyTorch, Tensorflow, Keras
- **Programming:** Production level code in C, C++ and Java.
- **Web Development:** Angular, Node, HTML, PHP
- **Hardware:** AVR Microcontrollers, Arduino boards, Raspberry Pi
- **Design Software:** Adobe Photoshop, Autodesk Fusion 360