

Apoorv Umang Saxena

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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 Ph.D., Computational and Data Sciences. Thesis: Leveraging KG Embeddings for Knowledge Graph Question Answering	Bangalore 2018–2022
Birla Institute of Technology and Science (BITS), Pilani B.E. (Hons.) Computer Science, Grade: 8.6	Pilani 2011–2015

EXPERIENCE

Inception Member of Technical Staff <ul style="list-style-type: none">– Inference and product engineering for diffusion LLMs	Remote/Bangalore September 2025 - Present
Adobe Research Research Scientist II <ul style="list-style-type: none">– 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. I was also a contributor to the first Firefly image model.– 12+ patents filed, published in major NLP conferences	Bangalore June 2022 - August 2025
Google Software Engineer 3 <ul style="list-style-type: none">– 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	Hyderabad May 2016–March 2017
Paypal Software Engineer 1	Chennai July 2015–November 2015

Flipkart
PS 2 Intern

Bangalore
January 2015–June 2015

Bhabha Atomic Research Centre
Summer Intern

Mumbai
Summer 2013

- 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