

PRAMOD CHUNDURI

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INDUSTRY EXPERIENCE

Applied Scientist, Amazon Web Services (AWS) *Santa Clara, USA* *Aug 2025 - Present*

- Building Agentic AI solutions to optimize big data processing workflows like Apache Spark
- Building state-of-the-art evaluation benchmarks for Root Cause Analysis (RCA) and Code Recommendations for Spark using domain-augmented LLM-as-a-Judge framework.

Applied Scientist Intern, Amazon Web Services (AWS) *Santa Clara, USA* *Summer 2024*

- Built an end-to-end **tabular RAG framework** with table retrieval and LLM-powered answer generation.
- Leveraged an ensemble of task-specific verifiers to **reduce hallucinations** and improve LLM generation accuracy.
- Achieved state-of-the-art open-domain tabular QA accuracy, improving by upto **8.6%** over existing methods.

Research Scientist Intern, Adobe Research *San Jose, USA* *Summer 2022*

- Developed an AI-driven video editing pipeline, utilizing a 3D Resnet-based model feature extractor and K-Means algorithm for precise content-based clustering.
- Achieved **80% accuracy** in recommending personalized video edits to the users.

EDUCATION

Ph.D. in Computer Science *Aug 2018 - July 2025*

Georgia Institute of Technology

Thesis Topic: Enabling Semantically Richer Queries over Unstructured Data (Data Systems, AI)

B.Tech. in Computer Science and Engineering *May 2017*

Indian Institute of Technology, Kanpur

PUBLICATIONS

1. HALO: Optimizing Long-Context Question Answering using Domain Hints, *Under Review Cycle*.
Pramod Chunduri, Francisco Romero, Ali Payani, Kexin Rong, Joy Arulraj.
2. **SketchQL: Video Moment Querying with a Visual Query Interface**, *SIGMOD 2025*.
Renzhi Wu*, Pramod Chunduri*, Ali Payani, Xu Chu, Joy Arulraj, Kexin Rong.
3. SketchQL Demonstration: Zero-shot Video Moment Querying with Sketches, *VLDB 2024 (Demo)*.
Renzhi Wu*, Pramod Chunduri*, Dristi Shah, Ashmitha Julius Aravind, Ali Payani, Xu Chu, Joy Arulraj, Kexin Rong.
4. **Tracer: Efficient Object Re-Identification in Networked Cameras through Adaptive Query Processing**, *Preprint*.
Pramod Chunduri, Yao Lu, Joy Arulraj.
5. **EVA: An End-to-End Exploratory Video Analytics System**, *DEEM at SIGMOD 2023*.
Gaurav Tarlok Kakkar, Jiashen Cao, Pramod Chunduri, Zhuangdi Xu, Suryatej Reddy Vyalla, and 6 others.
6. **Seiden: Revisiting Query Processing in Video Database Systems**, *VLDB 2023*.
Jaeho Bang, Gaurav Tarlok Kakkar, Pramod Chunduri, Subrata Mitra, Joy Arulraj.
7. **Zeus: Efficiently Localizing Actions in Videos using Reinforcement Learning**, *SIGMOD 2022*.
Pramod Chunduri, Jaeho Bang, Yao Lu, Joy Arulraj.

*Both authors contributed equally to the paper

TECHNICAL SKILLS

Systems	Video Analytics, Systems for AI, Tabular QA
AI/ML	Retrieval-augmented Generation (RAG), Data Management for LLMs, Reinforcement Learning, Computer Vision
Programming Languages	C, C++, Python, SQL, bash
Tools and Libraries	PyTorch, Huggingface Transformers, Pandas, OpenCV, OpenAI Gym, MySQL, Jupyter, L ^A T _E X

RESEARCH EXPERIENCE

AI-centric Data Systems	<i>Georgia Tech</i>	<i>Spring 2023 - Present</i>
– <i>HALO</i>: Built a novel domain hints interface to embed domain knowledge into LLM-powered QA pipelines. Reducing hallucinations by 20% and lower token cost by $1.7\times$ through automated and optimal application of domain hints. – <i>rag-demystified</i>: Built a retrieval-augmented generation (RAG) framework for complex QA; demystified inner workings of multi-hop LLM agents. Earned 800 GitHub stars and trended on Hacker News. – <i>AI-Powered Data Systems</i>: Enhanced open-source projects like stargazers-reloaded and EvaDB. Developed LLM model cascades and batch prompting to cut API costs by $10\times$ while maintaining accuracy in AI-driven applications.		
Video Analytics Systems	<i>Georgia Tech</i>	<i>Spring 2019 - Spring 2024</i>
– <i>SketchQL</i>: Developed a novel visual querying system to retrieve complex video events from user sketches. Leveraged transformers-based similarity search to improve retrieval accuracy by 20 F1 points over contrastive learning methods. – <i>Zeus</i>: Built a novel reinforcement learning-driven video analytics system to rapidly localize complex actions like accidents in videos. Improved query throughput by up to $22\times$ over the state-of-the-art. – <i>Tracer</i>: Developed an innovative VDBMS for efficiently re-identifying video objects, using adaptive query processing and a probabilistic search model, surpassing the state-of-the-art system by $3.9\times$ on diverse datasets.		

AWARDS

- School of Computer Science Incubator Graduate Fellowship, Co-recipient, Georgia Tech, Fall 2021.
- Microsoft Azure Grant of \$20,000 research compute credits, Fall 2021 - Spring 2022.
- Chair's fellowship, School of Computer Science, Georgia Tech, 2018.
- All India Rank 216 in JEE Advanced, All India Rank 107 in JEE Mains, All India Rank 3 in VITEEE, 2013.
- Kishore Vaigyanik Protsahan Yojana (KVPY) fellowship, DST, Government of India, 2012.
- State-wise top 1% certificate, National Standard Examination in Physics (NSEP), IAPT, India, 2012.

TEACHING

Teaching Assistant	<i>CS6422 Database System Implementation, Georgia Tech</i>	<i>Fall 2020/2021/2024, Spring 2025</i>
– Served as the co-head TA for a 120-student class. Designed core database systems projects (e.g. Buffer Manager, B+-Tree, Query Execution) for the educational BuzzDB database; Organized lectures; Designed Exams.		
Project Mentor	<i>CS6235 Real-Time Embedded Systems, Georgia Tech</i>	<i>Spring 2021 - Spring 2023</i>
– Mentored a team of 20 graduate students over 2 years to build the non-profit research platform NORP. Led the development of 1) Data visualization and analytics platform, 2) Non-profit data integration with social science researchers.		
Core Team Member	<i>Counselling Service, IIT Kanpur</i>	<i>Fall 2015 - Fall 2017</i>
– Supervised Junior Academic Mentors to organize remedial classes, provided one-on-one remedial academic assistance for freshmen and sophomores.		