

# Shyam Upadhyay

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## Employment History

- 2024 –  **Staff Research Scientist**  
Google Bard
- 2021 – 2024  **Senior Research Scientist**  
Google Bard (2023 – 2024), Google Assistant (2021 – 2023)
- 2019 – 2021  **Research Scientist**  
Google Assistant

## Education

- 2013 – 2019  **Ph.D. in Computer Science**  
University of Pennsylvania (2017 – 2019)  
University of Illinois at Urbana-Champaign (2013 – 2017)  
Advisor: Dan Roth
- 2009 – 2013  **B.Tech. in Computer Science and Engineering**  
Indian Institute of Technology, Kanpur, Uttar Pradesh, India

## Internships

- 2017  **Google Research, Mountain View, California**  
Mentors: Larry Heck, Gokhan Tür and Dilek Hakkani-Tür
- 2016  **Microsoft Research, Cambridge, Massachusetts**  
Mentors: Adam Kalai, Matt Taddy
- 2015  **Microsoft Research, Redmond, Washington**  
Mentor: Ming-Wei Chang
- 2012  **Microsoft Research, Redmond, Washington**  
Mentors: Bongshin Lee, Geoffrey Zweig, Sumit Gulwani

## Publications (in reverse chronological order)

### Conference Publications

- 1 Ayush Kaushal, Aditya Gupta, **Shyam Upadhyay**, and Manaal Faruqui, “Efficient Encoders for Streaming Sequence Tagging,” in *EACL (Long Paper)*, 2023.
- 2 Shuo-yiin Chang, Guru Prakash, Zelin Wu, Qiao Liang, Tara N Sainath, Bo Li, Adam Stambler, **Shyam Upadhyay**, Manaal Faruqui, and Trevor Strohman, “Streaming Intended Query Detection using E2E Modeling for Continued Conversation,” in *Interspeech*, 2022.
- 3 Jingfeng Yang, Aditya Gupta, **Shyam Upadhyay**, Luheng He, Rahul Goel, and Shachi Paul, “TableFormer: Robust Transformer Modeling for Table-Text Encoding,” in *ACL (Long Paper)*, 2022.
- 4 Aditya Gupta, Jiacheng Xu, **Shyam Upadhyay**, Diyi Yang, and Manaal Faruqui, “Disfl-QA: A Benchmark Dataset for Understanding Disfluencies in Question Answering,” in *Findings of ACL-IJCNLP (Long Paper)*, 2021.
- 5 Lianhui Qin, Aditya Gupta, **Shyam Upadhyay**, Luheng He, Yejin Choi, and Manaal Faruqui, “TIMEDIAL: Temporal Commonsense Reasoning in Dialog,” in *ACL (Long Paper)*, 2021.
- 6 Daniel Deutsch\*, **Shyam Upadhyay\***, and Dan Roth, “A General-Purpose Algorithm for Constrained Sequential Inference,” in *CoNLL (Long Paper)*, 2019.

- 7 Michael Roth and **Shyam Upadhyay**, “Combining Discourse Markers and Cross-lingual Embeddings for Synonym-Antonym Classification,” in *NAACL (Short Paper)*, 2019.
- 8 Daniel Khashabi, Snigdha Chaturvedi, Michael Roth, **Shyam Upadhyay**, and Dan Roth, “Looking Beyond the Surface: A Challenge Set for Reading Comprehension over Multiple Sentences,” in *NAACL (Long Paper)*, 2018.
- 9 Daniel Khashabi, Mark Sammons, Ben Zhou, Tom Redman, Christos Christodoulopoulos, Vivek Srikumar, Nicholas Rizzolo, Lev Ratinov, Guanheng Luo, Quang Do, Chen-Tse Tsai, Subhro Roy, Stephen Mayhew, Zhilli Feng, John Wieting, Xiaodong Yu, Yangqiu Song, Shashank Gupta, **Shyam Upadhyay**, Naveen Arivazhagan, Qiang Ning, Shaoshi Ling, and Dan Roth, “CogcompNLP: Your Swiss Army Knife for NLP,” in *LREC*, 2018.
- 10 **Shyam Upadhyay**, Manaal Faruqui, Gokhan Tür, Dilek Hakkani-Tür, and Larry Heck, “(Almost) Zero-Shot Cross-Lingual Spoken Language Understanding,” in *ICASSP*, 2018.
- 11 **Shyam Upadhyay**, Nitish Gupta, and Dan Roth, “Joint Multilingual Supervision for Cross-lingual Entity Linking,” in *EMNLP (Long Paper)*, 2018.
- 12 **Shyam Upadhyay**, Jordan Kodner, and Dan Roth, “Bootstrapping Transliteration with Constrained Discovery for Low-Resource Languages,” in *EMNLP (Long Paper)*, 2018.
- 13 **Shyam Upadhyay\***, Yogarshi Vyas\*, Marine Carpuat, and Dan Roth, “Robust Cross-lingual Hypernymy Detection using Dependency Context,” in *NAACL (Long Paper)*, 2018.
- 14 **Shyam Upadhyay** and Ming-Wei Chang, “Annotating Derivations: A New Evaluation Strategy and Dataset for Algebra Word Problems,” in *EACL (Long Paper)*, 2017.
- 15 Subhro Roy, **Shyam Upadhyay**, and Dan Roth, “Equation Parsing : Mapping Sentences to Grounded Equations,” in *EMNLP (Long Paper)*, 2016.
- 16 Yangqiu Song, **Shyam Upadhyay**, Haoruo Peng, and Dan Roth, “Cross-lingual Dataless Classification for Many Languages,” in *IJCAI*, 2016.
- 17 **Shyam Upadhyay**, Ming-Wei Chang, Kai-Wei Chang, and Wen-tau Yih, “Learning from Explicit and Implicit Supervision Jointly For Algebra Word Problems,” in *EMNLP (Long Paper)*, 2016.
- 18 **Shyam Upadhyay**, Manaal Faruqui, Chris Dyer, and Dan Roth, “Cross-lingual Models of Word Embeddings: An Empirical Comparison,” in *ACL (Long Paper)*, 2016.
- 19 **Shyam Upadhyay**, Nitish Gupta, Christos Christodoulopoulos, and Dan Roth, “Revisiting the Evaluation for Cross Document Event Coreference,” in *COLING (Long Paper)*, 2016.
- 20 Kai-Wei Chang, **Shyam Upadhyay**, Gourab Kundu, and Dan Roth, “Structural Learning with Amortized Inference,” in *AAAI*, 2015.

## Journal Publications

- 1 “Beyond the Imitation Game: Quantifying and Extrapolating the Capabilities of Language Models,” *Transactions on Machine Learning Research*, 2023.
- 2 Yangqiu Song, **Shyam Upadhyay**, Haoruo Peng, Stephen Mayhew, and Dan Roth, “Toward Any-language Zero-shot Topic Classification of Textual Documents,” in *Artificial Intelligence*, 2019.

## Workshop Publications



- 1 Anmol Agarwal, Jigar Gupta, Rahul Goel, **Shyam Upadhyay**, Pankaj Joshi, and Rengarajan Aravamudan, “CST5: Data Augmentation for Code-Switched Semantic Parsing,” in *Workshop on Taming Large Language Models*, 2023.
- 2 Xiang Zhou, Aditya Gupta, **Shyam Upadhyay**, Mohit Bansal, and Manaal Faruqui, “Can Sequence-to-Sequence Transformers Naturally Understand Sequential Instructions?” In *\*SEM*, 2023.
- 3 **Shyam Upadhyay**, Kai-Wei Chang, Matt Taddy, Adam Kalai, and James Zou, “Beyond Bilingual: Multi-sense Word Embeddings using Multilingual Context,” in *Workshop on Repl4NLP (Long Paper)*, **Best Paper Award**, 2017.

- 4 Rachel Wities, Vered Shwartz, Gabriel Stanovsky, Meni Adler, Ori Shapira, **Shyam Upadhyay**, Dan Roth, Eugenio Martinez Camara, Iryna Gurevych, and Ido Dagan, “A Consolidated Open Knowledge Representation for Multiple Texts,” in *LSDSem*, 2017.
- 5 **Shyam Upadhyay**, Christos Christodoulopoulos, and Dan Roth, “”Making the News”: Identifying Noteworthy Events in News Articles,” in *The 4th Workshop on EVENTS*, 2016.
- 6 Ching-pei Lee, Kai-Wei Chang, **Shyam Upadhyay**, and Dan Roth, “Distributed Training of Structured SVM,” in *OPT Workshop at NIPS*, 2015.







## Preprints

- 1 Aman Madaan, Pranjal Aggarwal, Ankit Anand, Srividya Pranavi Potharaju, Swaroop Mishra, Pei Zhou, Aditya Gupta, Dheeraj Rajagopal, Karthik Kappaganthu, Yiming Yang, **Shyam Upadhyay**, Mausam, and Manaal Faruqui, “Automix: Automatically mixing language models,” in *Arxiv Preprint*, vol. abs/2310.12963, 2023.
- 2 Gemini Team, “Gemini: A Family of Highly Capable Multimodal Models,” in *Arxiv Preprint*, vol. abs/2312.11805, 2023.
- 3 Pei Zhou, Aman Madaan, Srividya Pranavi Potharaju, Aditya Gupta, Kevin R McKee, Ari Holtzman, Jay Pujara, Xiang Ren, Swaroop Mishra, Aida Nematzadeh, **Shyam Upadhyay**, and Manaal Faruqui, “How FaR Are Large Language Models From Agents with Theory-of-Mind?” In *Arxiv Preprint*, vol. abs/2310.03051, 2023.
- 4 Shikhar Vashishth, **Shyam Upadhyay**, Gaurav Singh Tomar, and Manaal Faruqui, “Attention Interpretability across NLP Tasks,” in *Arxiv Preprint*, vol. abs/1909.11218, 2019.
- 5 Kai-Wei Chang, **Shyam Upadhyay**, Ming-Wei Chang, Vivek Srikumar, and Dan Roth, “IllinoisSL: A JAVA Library for Structured Prediction,” in *Arxiv Preprint*, vol. abs/1509.07179, 2015.






## Patents

- 2023      *Intended Query Detection using E2E Modeling for Continued Conversation*  
US Patent App. 18/186,872
-  *Systems and Methods for Code-switched Semantic Parsing*  
US Patent App. 17/981,016

## Professional Service

- 2023 – 2026      Associate Editor for [ACM TALLIP](#).
- 2023      Sponsorship Chair for [EMNLP](#).
- 2021      Area Chair ([AAAI](#)), Area Chair (Multilinguality Track at [NAACL-HLT](#)).
- 2020      Area Chair (Multilinguality Track at [\\*SEM](#)).
- 2019      Area Chair for Information Extraction Track for [EMNLP-IJCNLP](#).
- Reviewer      For ACL, EMNLP, NAACL, CoNLL, AACL-IJCNLP, \*SEM, AAAI, IJCAI.

## Awards and Achievements

- 2019      Selected to attend Heidelberg Laureate Forum, Heidelberg, Germany.
- 2018      One of the [Top Reviewers](#) at ACL 2018.
- 2017      [Best Paper Award](#) at Repl4NLP Workshop 2017.
- 2009      **3rd** rank in the All India Engineering Entrance Examination (AIEEE) 2009.
-  **113th** rank in the Joint Entrance Examination (IIT-JEE) 2009.