

# Shivanshu Gupta

Graduate Student Researcher, UC Irvine  
Advisor: *Prof. Sameer Singh*

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## RESEARCH INTERESTS

Compositional Generalization, Semantic Parsing, Question Answering, Knowledge Distillation, Multi-modal Representation Learning, NLP, Machine Learning

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## EDUCATION

**University of California Irvine**

PhD, Computer Science

- **Dean's Award**

*United States*

*Sept '20 - Present*

**Indian Institute of Technology Delhi**

Dual Degree - B.Tech. & M.Tech., Computer Science and Engineering

- Masters Department Rank: 1

- Multiple **Semester Merit Awards**

*India*

*Jul '13 - Jun '18*

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## PUBLICATIONS

**Shivanshu Gupta**, Matt Gardner, Sameer Singh. **Structurally Diverse Sampling Reduces Spurious Correlations in Semantic Parsing Datasets.** *arXiv:2203.08445*. [Paper]

Ben Bogin, **Shivanshu Gupta**, Jonathan Berant. **Unobserved Local Structures Make Compositional Generalization Hard.** *arXiv:2201.05899*. [Paper]

Ben Bogin, **Shivanshu Gupta**, Matt Gardner, Jonathan Berant. **COVR: A Test-Bed for Visually Grounded Compositional Generalization with Real Images.** *EMNLP 2021*. [Paper] [Website]

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## AWARDS & ACHIEVEMENTS

2017 **Outstanding Contribution Award**, *Training & Placement Cell, IIT Delhi.*

2015 **Summer Undergraduate Research Award**, *Industrial Research & Development Unit, IIT Delhi.*

2013 **All-India-Rank of 189** in IIT-JEE Advanced among over 150,000 candidates.

2013 **Kishore Vaigyanik Protsahan Yojana Scholarship**, *Department of Science & Technology, Government of India.*

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## EXPERIENCE

### RESEARCH

**Graduate Student Researcher**

*Sept '20 - Present, UC Irvine*

Working on analyzing and inducing systematic generalization capabilities in NLP models and on questions answering with complex questions.

**Applied Scientist Intern**

*Jun '22 - Sep '22, Amazon Alexa AI, Sunnyvale*

Joined the Web Information team. Worked on using Cross-Lingual Knowledge Distillation to improve the performance of Answer Sentence Selection (AS2) models in low-resource languages lacking labeled data.

**Applied Research Engineer - Machine Learning**

*Oct '18 - Jul '20, LinkedIn, Bangalore*

Worked as a Research Fellow at Microsoft Research India on improving LinkedIn's Job Recommendation pipeline using Extreme Multi-label Classification algorithms.

### ENGINEERING

**Software Development Engineering Intern**

*May - Jul '17, Amazon, Delhi*

Joined the Last Mile Technology team. Enabled the externalization of Amazon's Last Mile Package Delivery technology.

## Software Development Engineering Intern

*May - Jul '16, Amazon, Bangalore*

Joined the Machine Learning - Seller Service team. Developed pipeline abstractions for PySpark to enable rapid prototyping of machine learning algorithms.

## TEACHING

### Teaching Assistant

*Apr '22 - Jun '22, UC Irvine*

Teaching Assistant for the Natural Language Processing course.

### Teaching Assistant

*Jul '17 - May '18, IIT Delhi*

Teaching Assistant for three courses: Data Structures, Programming Languages and Artificial Intelligence.

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## PROJECTS

### Zero-shot Learning in Extreme Multi-label Classification (XMLC) using Label Features

*Advisor: Dr. Prateek Jain*

*LinkedIn & Microsoft Research*

Extended Parabel, a label-tree based XMLC algorithm, to generalise to new labels post-training using label features.

### Neural Model for Question Answering on Wikipedia Tables

[\[Master's Thesis\]](#)

*Advisor: Prof. Mausam*

*IIT Delhi*

Proposed improvements to the state-of-the-art Neural Semantic Parser for the WIKITABLEQUESTIONS dataset.

### Predicting User Action in a Dating Website

*Advisor: Prof. Mausam*

*IIT Delhi*

Designed a Markov Network based model for predicting whether a user will 'like' or 'hide' another user's profile.

### Framework for Cloud Storage Consolidation, Privacy and Availability

[\[App\]](#) [\[Report\]](#)

*Advisor: Prof. Huzur Saran*

*IIT Delhi*

Developed a decentralised framework to simulate a reliable, secure, and consolidated storage over multiple cloud storages over multiple heterogeneous cloud storages.

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## SERVICE

### Student Volunteer, EMNLP 2021

*Nov '21, Punta Cana*

In person volunteer for the LAW-DMR workshop.

### Technical Team Leader, Training & Placements Cell

*Apr '15 - Apr '17, IIT Delhi*

- Redesigned the Training & Placement web portals used to match students and recruiters.
- Formed and led a new Technical Team responsible for managing the web portals.

### Technical Coordinator, ACM Student Chapter

*Apr '14 - Aug '15, IIT Delhi*

Developed the society's website. Organized events focused on the CS community of IIT Delhi.

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## TECHNICAL SKILLS

**Languages:** Python, C/C++, Java, Bash, Scala, L<sup>A</sup>T<sub>E</sub>X

**Libraries/Frameworks:** PyTorch, AllenNLP, Tensorflow