

Swarnadeep Saha

CS PhD Candidate, UNC Chapel Hill, NC, USA

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RESEARCH INTERESTS

Natural Language Processing, Deep Learning, Interpretability, Graphs, Structured Prediction.

EDUCATION

UNC Chapel Hill

North Carolina, USA

Ph.D. in Computer Science, Advisor: [Prof. Mohit Bansal](#)

2019 - Present

Munroe and Rebecca Cobey Fellowship

Indian Institute of Technology, Delhi

Delhi, India

M.Tech. in Computer Science, Advisor: [Prof. Mausam](#), GPA: 9.01/10.0

2015 - 2017

Best M.Tech Thesis Award in Computer Science

Jadavpur University

Kolkata, India

B.E. in Computer Science, GPA: 8.72/10.0

2010 - 2014

INDUSTRY EXPERIENCE

Salesforce Research

Palo Alto, USA

Research Intern, Mentors: [Dr. Nazneen Rajani](#) and [Dr. Jesse Vig](#)

Summer 2021

○ Topics in **interpretability**, **commonsense reasoning** and **active learning**.

IBM Research

Bangalore, India

Research Engineer, Manager: [Dr. Shantanu Godbole](#)

July 2017 - June 2019

○ Designed and implemented large scale **Machine Learning** and **NLP** solutions for **Intelligent Tutoring Systems (Watson Tutor)**, notably in the areas of **Automatic Short Answer Grading** and **Text Segmentation**.

○ *Lab-wide Research Appreciation* award and twice *Manager's Choice* award.

Adobe Systems

Noida, India

Member of Technical Staff, Manager: [Rajeev Sharma](#)

June 2014 - July 2015

○ Worked as a full-stack software developer in the **Acrobat Reader Team** of Adobe.

PUBLICATIONS

1. **Swarnadeep Saha**, Prateek Yadav, Lisa Bauer, and Mohit Bansal “*ExplaGraphs: An Explanation Graph Generation Task for Structured Commonsense Reasoning*”, **EMNLP 2021** [[pdf](#)].
2. **Swarnadeep Saha**, Prateek Yadav, and Mohit Bansal “MULTIPROVER: *Generating a Set of Proofs for Improved Interpretability in Rule Reasoning*”, **NAACL 2021** [Acceptance Rate: 26%] [[pdf](#)].
3. **Swarnadeep Saha**, Sayan Ghosh, Shashank Srivastava, and Mohit Bansal “PROVER: *Proof Generation for Interpretable Reasoning over Rules*”, **EMNLP 2020** [Acceptance Rate: 24%] [[pdf](#)].

4. **Swarnadeep Saha**, Yixin Nie, and Mohit Bansal “*ConjNLI: Natural Language Inference over Conjunctive Sentences*”, **EMNLP 2020** [Acceptance Rate: 24%] [\[pdf\]](#).
5. Chul Sung, Tejas Dhamecha, **Swarnadeep Saha**, Tengfei Ma, Vinay Reddy, and Rishi Arora “*Pre-Training BERT on Domain Resources for Short Answer Grading*”, **EMNLP 2019** [Acceptance Rate: 23%] [\[pdf\]](#).
6. **Swarnadeep Saha**, Malolan Chetlur, Tejas I. Dhamecha, Shantanu Godbole and others “*Aligning Learning Objectives to Learning Resources: A Lexico-Semantic Spatial Approach*”, **IJCAI 2019** [Acceptance Rate: 17%] [\[pdf\]](#).
7. Smit Marvaniya, **Swarnadeep Saha**, Tejas I. Dhamecha, Peter Foltz, Renuka Sindhgatta and Bikram Sengupta “*Creating Scoring Rubric from Representative Student Answers for Improved Short Answer Grading*”, **CIKM 2018** [Acceptance Rate: 17%] [\[pdf\]](#).
8. **Swarnadeep Saha**, Tejas I. Dhamecha, Smit Marvaniya, Peter Foltz, Renuka Sindhgatta and Bikram Sengupta “*Joint Multi-Domain Learning for Automatic Short Answer Grading*”, **arXiv 1902.09183** [\[pdf\]](#).
9. **Swarnadeep Saha** and Mausam “*Open Information Extraction from Conjunctive Sentences*”, **COLING 2018** [Acceptance Rate: 37%] [\[pdf\]](#)
10. Tejas I. Dhamecha, Smit Marvaniya, **Swarnadeep Saha**, Renuka Sindhgatta and Bikram Sengupta “*Balancing Human Efforts and Performance of Student Response Analyzer in Dialog-based Tutors*”, **AIED 2018** [Acceptance Rate: 25%] [\[pdf\]](#)
11. **Swarnadeep Saha**, Tejas I. Dhamecha, Smit Marvaniya, Renuka Sindhgatta and Bikram Sengupta “*Sentence Level or Token Level Features for Automatic Short Answer Grading?: Use Both*”, **AIED 2018** [Acceptance Rate: 25%] [\[pdf\]](#)
12. **Swarnadeep Saha**, Harinder Pal and Mausam “*Bootstrapping for Numerical Open IE*”, **ACL 2017** [Acceptance Rate: 18%] [\[pdf\]](#)

ACHIEVEMENTS AND AWARDS

- Awarded the **Munroe and Rebecca Cobey Fellowship** at UNC Chapel Hill.
- Awarded the **Best M.Tech Thesis** in CS at IIT Delhi.
- Awarded the lab-wide **Research Appreciation Award** at IBM Research.
- Twice awarded **Manager’s Choice Award** at IBM Research.
- Secured an **All India Rank of 142** in Graduate Aptitude Test in Engineering (GATE), 2014.

SOFTWARE SKILLS

- Programming Languages: C, C++, Java, Scala, Python, Perl, Assembly Languages.
- Databases: MySQL, PostgreSQL.
- Frameworks and Tools: PyTorch, Keras, Hadoop, Git, Perforce, Maven, SBT.

RELEVANT GRADUATE LEVEL COURSES

- Machine Learning, Advanced Machine Learning, Graphical Models, Generative Models, Advanced NLP, Grounding in NLP, Structured Prediction, Machine Learning and Graphics.

REFERENCES

- [Dr. Mohit Bansal](#), Associate Professor, CS Department, UNC Chapel Hill.
- [Dr. Mausam](#), Professor, CSE Department, IIT Delhi.
- [Dr. Shashank Srivastava](#), Assistant Professor, CS Department, UNC Chapel Hill.
- [Dr. Nazneen Rajani](#), Senior Research Scientist, Salesforce Research.
- [Dr. Shantanu Godbole](#), Senior Research Manager, IBM Research.