

# Subhro Roy

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CONTACT INFORMATION	1031 Walnut Ave, Apt-3334 Fremont, CA-94536 WWW : <a href="http://sroy9.github.io">http://sroy9.github.io</a>	Mobile: +1-(217)-402-4760 E-mail: roysubhro20@gmail.com
POSITIONS	<b>Senior Researcher</b> , Microsoft Semantic Machines, Oct 2019 - present  <b>Postdoctoral Associate</b> , Massachusetts Institute of Technology, Aug 2017 - Sep 2019	
EDUCATION	<b>University of Illinois, Urbana Champaign</b> Ph.D., Computer Science, 2017 Thesis: Reasoning about Quantities in Natural Language Advisor: Prof. Dan Roth  <b>Indian Institute of Technology, Kharagpur</b> B.Tech, Computer Science and Engineering, 2012 GPA: 9.52/10.0	
JOURNAL PUBLICATIONS	<i>An Intelligent Architecture for Grounded Language Communication with Field Robots</i> T. Howard, N. Roy, J. Fink, J. Arkin, R. Paul, D. Park, <b>S. Roy</b> , D. Barber, R. Bendell, K. Schmeckpeper, J. Tian, J. Oh, M. Wigness, L. Quang, B. Rothrock, J. Nash, M. Walter, F. Jentsch, E. Stump Field Robotics 2021  <i>Task-Oriented Dialogue as Dataflow Synthesis**</i> J. Andreas, J. Bufe, D. Burkett, C. Chen, J. Clausman, J. Crawford, K. Crim, J. DeLoach, L. Dorner, J. Eisner, H. Fang, A. Guo, D. Hall, K. Hayes, K. Hill, D. Ho, W. Iwaszuk, S. Jha, D. Klein, J. Krishnamurthy, T. Lanman, P. Liang, C. H. Lin, I. Lintsbakh, A. McGovern, A. Nisnevich, A. Pauls, D. Petters, B. Read, D. Roth, <b>S. Roy</b> , J. Rusak, B. Short, D. Slomin, B. Snyder, S. Striplin, Y. Su, Z. Tellman, S. Thomson, A. Vorobev, I. Witoszko, J. Wolfe, A. Wray, Y. Zhang and A. Zotov TACL 2020  <i>Multimodal estimation and communication of latent semantic knowledge for robust execution of robot instructions</i> Jacob Arkin, Daehyung Park, <b>Subhro Roy</b> , Matthew R Walter, Nicholas Roy, Thomas Howard, Rohan Paul IJRR 2020  <i>Mapping to Declarative Knowledge for Word Problem Solving</i> <b>Subhro Roy</b> and Dan Roth TACL 2018  <i>Reasoning about Quantities in Natural Language</i> <b>Subhro Roy</b> , Tim Vieira and Dan Roth TACL 2015	
CONFERENCE PUBLICATIONS	<i>BenchCLAMP: A Benchmark for Evaluating Language Models on Semantic Parsing</i> <b>Subhro Roy</b> , Sam Thomson, Tongfei Chen, Richard Shin, Adam Pauls, Jason Eisner, Benjamin Van Durme Arxiv  <i>Addressing Resource and Privacy Constraints in Semantic Parsing Through Data Augmentation</i> Kevin Yang, Olivia Deng, Charles Chen, Richard Shin, <b>Subhro Roy</b> , Benjamin Van Durme Findings of ACL 2022  <i>Constrained Language Models Yield Few-Shot Semantic Parsers</i> Richard Shin, Christopher H. Lin, Sam Thomson, Charles Chen, <b>Subhro Roy</b> , Emmanouil Antonios Platanios, Adam Pauls, Dan Klein, Jason Eisner, Benjamin Van Durme EMNLP 2021	

*Value-Agnostic Conversational Semantic Parsing*

Emmanouil Antonios Platanios, Adam Pauls, **Subhro Roy**, Yuchen Zhang, Alex Kyte, Alan Guo, Sam Thomson, Jayant Krishnamurthy, Jason Wolfe, Jacob Andreas, Dan Klein  
ACL 2021

*Inferring Task Goals and Constraints using Bayesian Nonparametric Inverse Reinforcement Learning*

Daehyung Park, Michael Noseworthy, Rohan Paul, **Subhro Roy**, and Nicholas Roy  
CoRL 2019

*Task-Conditioned Variational Autoencoders for Learning Movement Primitives*

Michael Noseworthy, Rohan Paul, **Subhro Roy**, Daehyung Park and Nicholas Roy  
CoRL 2019

*Leveraging Past References for Robust Language Grounding*

**Subhro Roy\***, Michael Noseworthy\*, Rohan Paul, Daehyung Park and Nicholas Roy  
CoNLL 2019

*Grounding Robot Plans from Natural Language Instructions with Incomplete World Knowledge*

Daniel Nyga\*, **Subhro Roy\***, Rohan Paul\*, Daehyung Park, Mihai Pomarlan, Michael Beetz and Nicholas Roy  
CoRL 2018

*Real-Time Human-Robot Communication for Manipulation Tasks in Partially Observed Environments*

Jacob Arkin, Rohan Paul, Daehyung Park, **Subhro Roy**, Nicholas Roy and Thomas M. Howard  
ISER 2018

*CogCompNLP: Your Swiss Army Knife for NLP*

D. Khashabi, M. Sammons, B. Zhou, T. Redman, C. Christodoulopoulos, V. Srikumar, N. Rizzolo, L. Ratnov, G. Luo, Q. Do, C. Tsai, **S. Roy**, S. Mayhew, Z. Feng, J. Wieting, X Yu , Y. Song , S. Gupta S. Upadhyay , N. Arivazhagan , Q. Ning , S. Ling and D. Roth  
LREC 2018

*Unit Dependency Graph and its Application to Arithmetic Word Problem Solving*

**Subhro Roy** and Dan Roth  
AAAI 2017

*Equation Parsing: Mapping Sentences to Grounded Equations*

**Subhro Roy**, Shyam Upadhyay and Dan Roth  
EMNLP 2016

*Approximating the Maximum Overlap of Polygons under Translation\*\**

Sariel Har-Peled and **Subhro Roy**  
Algorithmica 2016

*MAWPS: A Math Word Problem Repository*

Rik Koncel-Kedziorski\*, **Subhro Roy\***, Aida Amini, Nate Kushman and Hannaneh Hajishirzi  
NAACL 2016

*Solving General Arithmetic Word Problems*

**Subhro Roy** and Dan Roth  
EMNLP 2015

*Approximating the Maximum Overlap of Polygons under Translation\*\**

Sariel Har-Peled and **Subhro Roy**  
ESA 2014

*Learning for Mining Outlier Subgraphs from Network Datasets*

M. Gupta, A. Mallya, **S. Roy**, J. Cho, J. Han  
SDM 2014

\* denotes equal contribution

\*\* denotes author names in alphabetical order

PACKAGES  
DEVELOPED

**Illinois Quantifier** - detects and normalizes phrases containing quantifiable information in text, and normalizes them to a standard form.

**Illinois Math Solver** - automatically solves arithmetic word problems.

FUNDED  
PROJECTS

**Robotics Collaborative Technology Alliance (RCTA) or the US Army Research Labs (ARL)**, USA Human-Robot Interaction and Intelligence for Human-Robot Teams in army scenarios. Lead Postdoc representing MIT as an alliance member with several other academic and research institutions across the US.

**Toyota Research Institute (TRI)**, USA Project titled Reading the Mind with Language and Vision. Application domain autonomous cars and home service robots. Lead Postdoc representing Robust Robotics Group. Collaborative project with the Center for Brains Minds and Machines at CSAIL, MIT.

INTERNSHIPS

**Allen Institute for Artificial Intelligence, Seattle** **May-Jul 2016**  
Supervisor : Mark Hopkins  
Open domain algebra word problem solver

**Microsoft Research, Redmond, USA** **May-Aug 2015**  
Supervisor : Scott Yih, Ming-wei Chang, Chris Meek  
Relation extraction for knowledge base completion.

**Google, Mountain View, USA** **May-Aug 2014**  
Supervisor : J.D. Chen  
Understanding reviews for apps.

**ETH Zurich, Switzerland** **May-July 2011**  
Supervisor : Prof. Angelika Steger, Institute of Theoretical Computer Science  
Neural structure of the brain, to learn relations.

MEDIA

*Software teaches computers to translate words to math*  
Illinois News Bureau  
Link: <https://news.illinois.edu/view/6367/204435>

HONOURS AND  
AWARDS

- **List of Teachers Ranked as Outstanding** by Their Students, UIUC, Spring 2017.
- **List of Teachers Ranked as Excellent** by Their Students, UIUC, Fall 2013.
- Felicitated by the **Governor of West Bengal** for securing 2nd position in the state in ICSE 2006, and 5th position in ISC 2008 Examination.
- Selected among top 30 students from the state of West Bengal in **Indian National Mathematical Olympiad, 2007**
- Selected among top 1% students from all over India in **Indian National Chemistry Olympiad, 2007**
- Secured 2nd position in **Yahoo HackU** contest. Developed an online **Railway Reservation system** for Indian Railways
- Recipient of the **Kishore Vaigyanik Protsahan Yojana (KVPY) Scholarship**, awarded by the Department of Science and Technology, Government of India, 2006
- Recipient of **O.P.Jindal Engineering and Management Scholarship (OPJEMS)**, 2010
- Recipient of **Goralal Syngal Memorial Scholarship**, IIT Kharagpur

TEACHING  
EXPERIENCE

- **Teaching Assistant** for Machine Learning, Spring 2017
- **Teaching Assistant** for Undergraduate Algorithms, Fall 2013
- **Teaching Assistant** for Undergraduate Algorithms, Spring 2013
- **Teaching Assistant** for Ethical and Professional Issues in CS course, Fall 2012

SERVICE

**Reviewer** : ARR (2021-present), ICML 2015, TACL 2015, AAAI 2016, IJCAI 2016, EMNLP 2017, AAAI 2018, ACL 2018, ICLR 2018, IJRR 2018, IROS 2018, CoRL 2018, EMNLP 2018, ICLR 2019, ACL 2019, CoNLL 2019, ICLR 2020, ACL 2020, EMNLP 2020, ICLR 2021, NAACL 2021, EACL 2021

**SPC Member** : AAAI 2019