Swabha Swayamdipta

Postdoctoral Investigator, Allen Institute for AI

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Research Interests

- Inductive Biases for Structured Prediction and Unsupervised Learning
- Interpretability in Natural Language Processing
- Spurious and Social Biases in Datasets and Models

Education

Carnegie Mellon University   *Pittsburgh, PA, USA*
PhD in Language and Information Technologies   *2013 - 2019*
- **Advisors:** Noah A. Smith, Chris Dyer
- **University of Washington**, Seattle, WA — *Visiting PhD student Fall 2015 - Summer 2019*
- **Thesis:** Syntactic Inductive Biases in NLP

Columbia University   *City of New York, NY, USA*
Masters in Computer Science   *2011 - 2012*
- **Advisors:** Owen Rambow, Michael Collins
- **Specialization:** Natural Language Processing

National Institute of Technology   *Calicut, Kerala, India*
Bachelors of Technology in Computer Science and Engineering   *2006 - 2010*

Professional Experience

Allen Institute for AI   *Seattle, WA, USA*
Postdoctoral Investigator   *Aug 2019 - PRESENT*
- **Advisor**: Yejin Choi
- **Project Team**: MOSAIC

Allen Institute for AI   *Seattle, WA, USA*
Research Intern, **Host**: Matthew E. Peters   *Summer-Fall 2018*
- **Project:** Shallow Syntactic Priming of Large-scale Language Models

Google Inc.   *New York, NY, USA*
Research Intern, **Host**: Ankur P. Parikh   *Summer 2017*
- **Project:** Machine Comprehension for Google Neon

Columbia University   *New York, NY, USA*
Research Assistant, Center for Computational Learning Systems   *Jan 2013 - May 2013*

Google Inc.   *Mountain View, CA, USA*
Software Engineer Intern   *Summer 2012*
- Information retrieval evaluation for Google TV search

Oracle Server Technologies   *Bangalore, India*
Member Technical Staff   *2010 - 2011*
- **Project:** Unified messaging for Fusion Middleware

Microsoft Corporation   *Hyderabad, India*
Software Development Intern   *Summer 2009*
- **Project:** Search functionality for customer hierarchies

Teaching

Tutorials

2019	**Transfer Learning in Natural Language Processing**, Attendees: 350+	*NAACL*
2018	**Frame Semantics across Languages: Towards a Multilingual FrameNet**, Attendees: 30+	*CoLING*

Guest Lectures

Fall 2020	**Biases and Interpretability in NLP**, Host: Eunsol Choi	*UT-Austin CS 395T: Topics in NLP*
Winter 2019	**Phrase-Structure Parsing**, Host: Noah A. Smith	*UW CSE 447/547M: NLP*
Spring 2018	**Minimum Bayes Risk Decoding**, Host: Waleed Ammar	*UW CSE 599 D1: Advanced Topics in NLP*
Spring 2018	**Dependency Parsing**, Host: Noah A. Smith	*UW CSEP 517: NLP*
Fall 2017	**Unsupervised Learning**, Host: Noah A. Smith	*UW CSE 446: Machine Learning*
Fall 2014	**Dependency Parsing with Chu-Liu-Edmonds**, Hosts: Chris Dyer, Alon Lavie, Bob Frederking	*CMU 11-271: Algorithms for NLP*

Teaching Assitantship

Spring 2015	**CMU 11-411/611: Natural Language Processing**, Instructors: Chris Dyer, Alan W Black, Shomir Wilson	*Head TA*

Mentorship

Fall 2020 - PRESENT	**Alon Jacovi**, PhD, Bar Ilan University	*AI2 Intern*
Summer 2020 - PRESENT	**Jenny Liang**, BS, UW CSE	*AI2 Intern*
Summer 2020 - PRESENT	**Jize Cao**, BS, UW CSE	*AI2 Intern*
Spring 2020 - PRESENT	**Xuhui Zhou**, CLMS, UW Linguistics	
Fall 2019 - Spring 2020	**Yiben Yang**, PhD, Northwestern University	
Fall 2019 - Spring 2020	**Chaitanya Malaviya**, PYI, Allen Institute for AI	
2018 - 2019	**Ron Fan**, MS, UW CSE	
2018 - 2019	**Karishma Mandyam**, BS, UW CSE	

Invited Talks

Nov 02, 2020	**Responsible AI: Addressing Biases in Datasets and Models**, E+D Product Leads	*Microsoft*
Oct 30, 2019	**Biases and Learning Challenges in Natural Language Processing**, Rising Stars in EECS	*UIUC*
Oct 18, 2019	**Sprucing up a Dataset: Adversarially Filtering Dataset Artifacts**, Linguistics Colloquium	*UW Linguistics*
Apr 08, 2019	**Learning Challenges in Natural Language Processing**, AI2 Seminar	*Allen Institute for AI*
Apr 04, 2019	**Learning Challenges in Natural Language Processing**, NLP Seminar	*Stanford University*
Mar 13, 2019	**Learning Challenges in Natural Language Processing**, CLSP Seminar	*Johns Hopkins University*
Mar 11, 2019	**Learning Challenges in Natural Language Processing**, CILVR Seminar	*New York University*
Jan 22, 2019	**Learning Challenges in Natural Language Processing**, MSR Seminar	*Microsoft Research, New York*
Sep 15, 2018	**Representation Learning with Linguistic Structure**, MSR AI Breakthroughs Workshop	*Microsoft Research, Redmond*
Apr 27, 2018	**Syntactic Scaffolds for Semantic Structures**, NorthWest NLP	*Microsoft Research, Redmond*

Awards and Honors

2020	**Best Paper: Honorable Mention**, Don't Stop Pretraining: Adapt Language Models to Domains and Tasks	*ACL*
2009	**Sun Campus Ambassador Scholarship**, Bangalore, India	*Sun Microsystems*
2003	**National Talent Search Scholarship**, Rourkela, India	*NCERT, India*

Publications

Conference Papers

Dataset Cartography: Mapping and Diagnosing Datasets with Training Dynamics   *EMNLP 2020*
- **S. Swayamdipta**, R. Schwartz, N. Lourie, Y. Wang, H. Hajishirzi, N. A. Smith, Y. Choi

Generative Data Augmentation for Commonsense Reasoning   *Findings of EMNLP 2020*
- Y. Yang, C. Malaviya, J. Fernandez, **S. Swayamdipta**, R. LeBras, J. Wang, C. Bhagavatula, Y. Choi, and D. Downey

Adversarial Filters of Dataset Biases   *ICML 2020*
- R. LeBras, **S. Swayamdipta**, C. Bhagavatula, R. Zellers, M. E. Peters, A. Sabharwal, and Y. Choi

The Right Tool for the Job: Matching Model and Instance Complexities *ACL 2020*
- R. Schwartz, G. Stanovsky, **S. Swayamdipta**, J. Dodge, and N. A. Smith

Don't Stop Pretraining: Adapt Language Models to Domains and Tasks *ACL 2020*
- S, Gururangan, A. Marasović, **S. Swayamdipta**, K. Lo, I. Beltagy, D. Downey, and N. A. Smith
- **Best Paper Honorable Mention**

Syntactic Scaffolds for Semantic Structures *EMNLP 2018*
- **S. Swayamdipta**, S. Thomson, K. Lee, L. Zettlemoyer, C. Dyer, N. A. Smith.

Learning Joint Semantic Parsers from Disjoint Data *NAACL 2018*
- H. Peng, S. Thomson, **S. Swayamdipta**, N. A. Smith

Annotation Artifacts in Natural Language Inference Data *NAACL 2018*
- S. Gururangan*, **S. Swayamdipta***, O. Levy, R. Schwartz, S. Bowman, and N. A. Smith
- * equal contribution

Polyglot Semantic Role Labeling *ACL 2018*
- P. Mulcaire, **S. Swayamdipta**, and N. A. Smith

Multi-Mention Learning for Reading Comprehension with Neural Cascades *ICLR 2018*
- **S. Swayamdipta**, A. Parikh, T. Kwaitkowski

Greedy, Joint Syntactic and Semantic Parsing with Stack LSTMs *CoNLL 2016*
- **S. Swayamdipta**, M. Ballesteros, C. Dyer, N. A. Smith

A Dependency Parser for Tweets *EMNLP 2014*
- L. Kong, N. Schneider, **S. Swayamdipta**, A. Bhatia, C. Dyer, N. A. Smith

The Pursuit of Power and its Manifestation in Written Dialog *ICSC 2012*
- **S. Swayamdipta**, O. Rambow

Workshop Papers

Multi-Task Learning for Incremental Parsing using Stack LSTMs *WiML @ NeurIPS 2016*
- **S. Swayamdipta**, M. Ballesteros, C. Dyer, N. A. Smith

CMU: Arc-Factored, Discriminative Semantic Dependency Parsing *SemEval 2014*
- S. Thomson, D. Bamman, J. Dodge, **S. Swayamdipta**, N. Schneider, C. Dyer, N. A. Smith

The CMU Machine Translation Systems *WMT 2014*
- A. Matthews, C. Dyer, A. Lavie, G. Hanneman, W. Ammar, A. Bhatia, **S. Swayamdipta**, E. Schlinger, Y. Tsvetkov

Working Papers

Shallow Syntax in Deep Water *arXiv:1908.11047*
- **S. Swayamdipta**, M. Peters, B. Roof, C. Dyer and N. A. Smith

Frame-Semantic Parsing with Softmax-Margin Segmental RNNs and a Syntactic Scaffold *arXiv:1706.09528*
- **S. Swayamdipta**, S. Thomson, C. Dyer and N. A. Smith

DyNet: The Dynamic Neural Network Toolkit *arXiv:1701.03980*
- G. Neubig, C. Dyer, Y. Goldberg, A. Matthews, W. Ammar, A. Anastasopoulos, M. Ballesteros, D. Chiang, D. Clothiaux, T. Cohn, K. Duh, M. Faruqui, C. Gan, D. Garrette, Y. Ji, L. Kong, A. Kuncoro, G. Kumar, C. Malaviya, P. Michel, Y. Oda, M. Richardson, N. Saphra, **S. Swayamdipta**, P. Yin

Tutorial and Organization Papers

Transfer Learning in Natural Language Processing *NAACL 2019*
- S. Ruder, M. E. Peters, **S. Swayamdipta**, T. Wolf

Proceedings of the 2nd Workshop on Deep Learning Approaches for Low-Resource NLP (DeepLo 2019) *EMNLP 2019*
- C. Cherry, G. Durrett, G. Foster, R. Haffari, S. Khadivi, N. Peng, X. Ren, **S. Swayamdipta**

Frame Semantics across Languages: Towards a Multilingual FrameNet *CoLING 2018*
- C. F. Baker, M. Ellsworth, M. R. L. Petruck, **S. Swayamdipta**

Professional Service

Area Chair
- NAACL 2021: Sentence-Level Semantics
- EACL 2021: Sentence-Level Semantics
- ACL 2020: Semantics (Long)

Reviewer: Conferences
- ACL   2015-2020
- NAACL   2015-2020
- EMNLP   2015-2020
- NeurIPS   2018-2020
- ICML   2015,2019,2020
- EACL   2017
- AAAI   2017-2020
- CoNLL   2017-2018, 2020

Reviewer: Workshops
- NAACL Student Research Workshop   2016
- Workshop for Women in Machine Learning (WiML) at NeurIPS   2016
- Machine Reading for Question Answering (MRQA) Workshop   2017

Reviewer: Journals
- Computational Linguistics   2019 - PRESENT
- Transactions of ACL   2020 - PRESENT
- Journal of AI Research   2019

Co-organizer
- EMNLP 2019: Workshop on Deep Learning in Low Resource NLP (DeepLo)   2019
- West Coast NLP Workshop   2018
- Women's Research Day   2017
- UW-NLP Retreat   2015-2016

Mentorship at Conferences
- EMNLP 2020, ACL 2020, EMNLP 2018

Community Service

Allen Institute for AI   *Seattle WA, USA*
- Diversity, Equity and Inclusion Committee   2019-PRESENT
- AllenAI Outstanding Engineer Scholarship Committee   2019

Paul G. Allen School of CSE, University of Washington   *Seattle WA, USA*
- Faculty Recruiting Liaison   2019
- Graduate Student Advisory Council   2018
- Outreach: Highline Public High School   2017
- CS: Gradswomen   2016-2019

References

Yejin Choi, yejin@cs.washington.edu   *UW; AI2*

Noah A. Smith, noah@cs.washington.edu   *UW; AI2*

Chris Dyer, cdyer@google.com   *Google DeepMind*

Luke Zettlemoyer, lsz@cs.washington.edu   *UW; FAIR*