

# Akshita Bhagia

<https://akshitab.github.io>

Natural Language Processing, Machine Learning, Deep Learning

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## EDUCATION

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- **University of Massachusetts, Amherst** Amherst, MA  
*Master of Science in Computer Science; GPA: 4.00/4.00* Sep 2018 – May 2020
- **Dhirubhai Ambani Institute of Information and Communication Technology** Gandhinagar, India  
*Bachelor of Technology in Information and Communication Technology; GPA: 8.95/10* Jul 2011 – May 2015

## RELEVANT COURSES

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Machine Learning, Neural Networks, Deep Learning for NLP, Systems for Data Science, Advanced Algorithms

## EXPERIENCE

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- **Allen Institute for Artificial Intelligence (AI2)** Seattle, WA  
*Senior Research Engineer* Jul 2021 - Present  
*Research Engineer 2* Jul 2020 - Jun 2021
  - Participating in academic R&D and building open-source software libraries.
- **Cerebellum Capital** San Francisco, CA  
*Machine Learning Intern* May 2019 - Aug 2019
  - Adapted state-of-the-art deep learning models for financial time-series forecasting using Keras and Tensorflow.
- **InFoCusp** Ahmedabad, India  
*Lead Platform Development Engineer* Feb 2018 - Jun 2018  
*Research Programmer* Jul 2015 - Jan 2018
  - Engineered the core infrastructure of a data science platform used for R&D as well as production of financial models.

## PUBLICATIONS

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- Shruti Palaskar, **Akshita Bhagia**, Yonatan Bisk, Florian Metze, Alan W. Black, and Ana Marasović. *On Advances in Text Generation from Images Beyond Captioning: A Case Study in Self-Rationalization*. Findings of EMNLP (2022).
- Zhaofeng Wu, IV Robert L. Logan, Pete Walsh, **Akshita Bhagia**, Dirk Groeneveld, Sameer Singh, and Iz Beltagy. *Continued Pretraining for Better Zero- and Few-Shot Promptability*. EMNLP (2022).

## SELECTED PROJECTS

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- **Interpreting detection of style information in neural models** Jan 20 - May 20  
*Advised by: Prof. Mohit Iyyer*  
Worked on interpretability of detection of stylistic information by neural models in fictional text.
- **Answering questions about Roman art history** Sep 19 - Mar 20  
*Advised by: Prof. Mohit Iyyer, Prof. Eric Poehler*  
Worked on automated dataset construction and interface to explore art and architecture of Pompeii (ancient Roman city) using NLP and CV techniques.
- **Improving crowd-sourced annotations in biomedical text (Scripps Research)** Jan 19 - May 19  
*Advised by: Prof. Andrew McCallum, Dr. Andrew Su (Scripps Research)*  
Used Markov chain Monte Carlo methods to improve crowd-sourced annotations for disease and phenotype identification in bio-medical text, by modeling the bias of annotators and true labels of entities, improving NER F1-score by 8 points.
- **Neural Machine Translation using Structural Linguistic Information** Jan 19 - May 19  
Implemented a Transformer model for German-English translation. Achieved an improvement of 1.4 BLEU score by augmenting the transformer with linguistic information (BLEU - 28.8).

## OPEN-SOURCE SOFTWARE AND DATASETS

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- **allennlp** - <https://github.com/allenai/allennlp>  
NLP research library, built on PyTorch.
- **ai2-tango** - <https://github.com/allenai/tango>  
Library to organize your experiments into discrete steps that can be cached and reused throughout the lifetime of your research project.
- **ai2-tailor** - <https://github.com/allenai/ai2-tailor>  
NLP library for generating perturbations in text with semantic controls.
- **WMT22 African** - [https://huggingface.co/datasets/allenai/wmt22\\_african](https://huggingface.co/datasets/allenai/wmt22_african)  
Dataset release for the WMT22 Shared Task.  
Collaboration with Meta AI.
- **No Language Left Behind (NLLB)** - <https://huggingface.co/datasets/allenai/nllb>  
Dataset release. Mined bitext training data for the NLLB-200 models.  
Collaboration with Meta AI.

## OUTREACH AND SERVICE

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- **Co-organizer** for the [2022 WMT Shared Task on Large Scale Machine Translation Evaluation for African Languages](#).
- **Co-organizer** for [AllenNLP Hacks 2021](#) hackathon for minoritized communities.
- **Master's chair** for the graduate chapter of [UMass Amherst CSWomen](#) (Feb 2019 - May 2020); handled monthly travel grants. The organization was awarded a Women for UMass grant towards travel expenses for graduate students.
- **Grader** for Programming with Data Structures (Fall 2018), Neural Networks (Fall 2019).
- **Student Representative** of the Gender Cell at DA-IICT (2014-2015).

## TALKS AND PANELS

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- Workshop on the AllenNLP library at AllenNLP Hacks 2021.
- Workshop on Running experiments on Google Colaboratory at AllenNLP Hacks 2021.
- Panelist on the GHC Information Panel at UMass CICS in Spring 2020.

## AWARDS

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- Recipient of the AnitaB.org Grace Hopper Conference Scholarship 2019.

## MENTORING

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- **Sunitha Selvan**, Research Engineering Intern @ AI2 (Summer 2022).
- **Arjun Subramonian**, Research Engineering Intern @ AI2 - **AI2 Intern of the Year** (Summer 2021).
- **Subhodeep Maji**, Research Programmer Intern @ InFoCusp (Spring 2017).