

DEMI GUO

dguo@college.harvard.edu

EDUCATION

Harvard University, Cambridge, MA

M.S. in Computer Science

B.A. in Mathematics

[2018-2019]: Joined Facebook AI Research for a gap year as the youngest full-time employee.

Sep 2016 ~ May 2021

EXPERIENCE

Research Assistant, Harvard University

Present

Research Engineer, Facebook AI Research

Oct 2018 ~ Sep 2019

SWE Intern, Google Brain

Summer 2018

Trading Algorithm Developer, Hudson River Trading

Winter 2018

SWE Intern, Microsoft Bing

Summer 2017

SWE Intern, Quora ML/Infrastructure

Spring 2016

HONORS

- **Silver Medal**, International Olympiad in Informatics (**IOI**) (2015)
- **1st Place**, USA Computing Olympiad National Open (**USACO Open**) (2014, 2015)
- **Gold Medal**, Math Prize for Girls Olympiad (2015)
- National Selection Team (**top 20**) for International Math Olympiad (**IMO**) (2015)
- **1st Place Team**, OpenBracket Hackathon, awarded \$15k (2017)
- **1st Place**, Women Codesprint on HackerRank, awarded \$2k (2017)
- Honorable Mention (**top 20**), National Center for Women & Information Technology Award, awarded \$10k (2018)
- **Finalist**, CRA Outstanding Undergraduate Researcher Award (2020)

PUBLICATIONS & SUBMISSIONS

[\[1\] Parameter-Efficient Transfer Learning with Diff Pruning](#)

Demi Guo, Alexander M. Rush, Yoon Kim

Annual Meeting of the Association for Computational Linguistics (ACL), 2021.

[\[2\] Sequence-Level Mixed Sample Data Augmentation](#)

Demi Guo, Yoon Kim, Alexander M. Rush

Empirical Methods in Natural Language Processing (EMNLP), 2020.

[\[3\] Learning Algorithms for Automated Data Structure Designs](#)

Demi Guo, Subarna Chatterjee, Stratos Idreos

ACM Special Interest Group on Management of Data (SIGMOD) SRC, 2021.

[\[4\] Analyzing Machine-learned Representations: A Natural Language Case Study](#)

Ishita Dasgupta, **Demi Guo**, Samuel J Gershman, Noah D Goodman

Cognitive Science journal. 2020.

[\[5\] PointContrast: Unsupervised Pre-training for 3D Point Cloud Understanding](#)

Saining Xie, Jiatao Gu, **Demi Guo**, Charles Qi, Leonidas Guibas, Or Litany

European Conference on Computer Vision (ECCV) Spotlight, 2020.

[\[6\] Order-aware Generative Modeling Using the 3D-Craft Dataset](#)

Zhuoyuan Chen*, **Demi Guo***, Xiao Tong*, Saining Xie, Xinlei Chen, ..., Lawrence C. Zitnick (*equal contribution)

International Conference on Computer Vision (ICCV), 2019.

[\[7\] Evaluating Compositionality in Sentence Embeddings](#)

Ishita Dasgupta, **Demi Guo**, Andreas Stuhlmuller, Samuel J Gershman, Noah D Goodman

Annual Meeting of the Cognitive Science Society (CogSci), 2018.

[\[8\] Latent Alignment and Variational Attention](#)

Yuntian Deng*, Yoon Kim*, Justin Chiu, **Demi Guo**, Alexander M. Rush

Conference on Neural Information Processing Systems (NeurIPS), 2018.

[\[9\] The Data Calculator: Data Structure Design and Cost Synthesis from First Principles and Learned Cost Models](#)

Stratos Idreos, Kostas Zoumpatianos, Brian Hentschel, Michael S. Kester, **Demi Guo**

The ACM Special Interest Group on Management of Data (SIGMOD), 2018.

WORKSHOP & MANUSCRIPTS

[\[1\] MicroNet Submission for Efficient Language Modeling](#)

Demi Guo*, Hanrui Wang*, Zhongxia Yan*, Philip Isola, Song Han (*equal contribution)
Conference on Neural Information Processing Systems (NeurIPS) MicroNet Competition (1st Place), 2019.

[\[2\] Biological Structure and Function Emerge from Scaling Unsupervised Learning to 250 Million Protein Sequences](#)

Alex Rives*, Sidharth Goyal*, Joshua Meier*, **Demi Guo***, Myle Ott, ..., Rob Fergus (*equal contribution)
BioRxiv 2019. Most Downloaded BioRxiv Paper in Synthetic Biology Category of All Time.

[\[3\] CraftAssist: A Framework for Dialogue-enabled Interactive Agents](#)

Jonathan Gray*, Kavya Srinet*, et al (*equal contribution)
Arxiv 2019. With an additional position paper and a blog post.

[\[4\] Evaluating Compositionality in Sentence Embeddings](#)

Ishita Dasgupta, **Demi Guo**, Andreas Stuhlmuller, Samuel J Gershman, Noah D Goodman
North American Chapter of the Association for Computational Linguistic (NAACL) Gen-Deep Workshop, 2018.

[\[5\] Past and Future Steps for Adaptive Storage Data Systems: From Shallow to Deep Adaptivity](#)

Stratos Idreos, M. Athanassoulis, Niv Dayan, **Demi Guo**, Michael Kester, Lukas Maas, Kostas Zoumpatianos
International Conference on Very Large Data Bases (VLDB) workshop, 2016

LEADERSHIP AND SERVICES

Team USA Coach member, USA Computing Olympiad

- Coach for Team USA at International Olympiad in Informatics (IOI). Team USA won 1st place.

Co-President, Women Engineers Code Conference

- Led 20+ Harvard students to run the largest student-run women in computer science conference (600+ attendees)

Board Member, Harvard Women in Computer Science

- Served as alumni relations chair to organize mentorship programs for younger female CS majors

Director, Harvard-MIT Math Tournament (HMMT)

- Helped to set up problems and organize onsite rounds.

Algorithm Coach, Alpha Star Academy

- Taught high school students about algorithms and data structures

PROGRAMMING SKILLS

Experienced with *Python* (including *PyTorch*, *Tensorflow*, *Pandas* and *Numpy*), *C/C++* (for systems and high performance code), and *LaTeX*. Familiar with *JavaScript*, *Java*, *HTML*, *CSS*, *MySQL*, *Redshift*, *Hive*.