

JACOB BREMERMAN

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Education

University of Southern California

Ph.D. in Computer Science; Advisors: Xiang Ren and Jonathan May

Aug. 2021 –

Los Angeles, California

University of Maryland

Master of Science in Computer Science; Advisor: Douglas W. Oard

Aug. 2019 – May 2021

College Park, Maryland

University of Maryland

Bachelor of Science in Physics & Bachelor of Arts in Spanish; Minor in Mathematics

Aug. 2013 – May 2017

College Park, Maryland

Academic Research Experience

INK Lab; University of Southern California

Research Assistant

- Advisors: **Xiang Ren** and **Jonathan May**
- Work on multilingual natural language processing

Aug. 2021 –

Los Angeles, California

CLIP Lab; University of Maryland

Research Assistant

- Advisor: **Douglas Oard**
- Work on new evaluation measures, collections and experiments of natural language processing and information retrieval tasks

Aug. 2019 – Jun. 2021

College Park, Maryland

Department of Linguistics; University of Maryland

Undergraduate Researcher

- Mentor: **Sunhee Kim Fuji**
- Work on second-language acquisition for adult learners in immersion programs

Aug. 2015 – May 2017

College Park, Maryland

Gemstone Honors Program; University of Maryland

Undergraduate Researcher

- Mentor: **Bao Yang**
- Work on piezoelectric touchscreen design, prototyping and testing

Aug. 2013 – May 2017

College Park, Maryland

Research Internship Experience

FASTPARSE Lab; Universidade da Coruña

Research Assistant

- Mentor: **David Vilares Calvo**
- Work on incorporating explicit syntactic information in machine translation systems

Jun. 2021 – Sept. 2021

A Coruña, Spain

HLTCOE; Johns Hopkins University

Research Intern

- Mentor: **Matt Post**
- Scraped and processed audio and subtitle files for speech translation dataset
- Developed new evaluation measures for machine translation and tested them for correlation with existing measures
- Publications: Bremerman et al. On the Evaluation of Machine Translation n-best Lists, Salesky et al. The Multilingual TEDx Corpus for Speech Recognition and Translation

May 2020 – Aug. 2020

Baltimore, MD

HLTCOE; Johns Hopkins University

Visiting Research Scholar

- Mentors: **James Mayfield** and **Dawn Lawrie**
- Developed an information retrieval system that could handle named-entity queries and document term labels
- Helped organize the generation of an information retrieval test collection with named-entity markup.
- Publication: Bremerman et al. Two Test Collections for Retrieval Using Named Entity Markup

May 2019 – Aug. 2019

Baltimore, MD

Professional Experience

Honors College; University of Maryland

Program Coordinator

- Helped run university honors programs in cybersecurity and entrepreneurship with administrative and advisory roles
- Managed a \$5M scholarship budget, advised dozens of undergraduate students, planned and ran workshops and events, led systematic program evaluation, etc.

Oct. 2017 – May 2019

College Park, Maryland

Teaching Experience

Entrepreneurship and Innovation Honors Program; University of Maryland **Oct. 2017 – Apr. 2018**
Teaching Assistant *College Park, Maryland*
• Teaching assistant for courses in international and technology entrepreneurship, HEIP143, HEIP240, HEIP241, ENES211

Gemstone Honors Program; University of Maryland **Aug. 2014 – May 2017**
Teaching Assistant *College Park, Maryland*
• Teaching assistant in several undergraduate courses on research foundations, GEMS100, GEMS102, GEMS202.
• Steering Committee member for GEMS100, planning curriculum, course evaluation, etc.

Invited Talks

Generating and Evaluating Alternate Translations **Jul. 2021**
Universidade da Coruña *A Coruña, Spain*
• Slides

Generating and Evaluating Alternate Translations **Oct. 2020**
Human Language Technology Center of Excellence *Baltimore, Maryland*
• Slides

Service

Reviewer: EMNLP 2021, EMNLP2022
Secondary Reviewer: EMNLP 2020

Honors

Angelo Bardasis Memorial Scholar **2014**
University of Maryland Department of Physics

HENAAC Scholar **2013**
Great Minds in STEM

AFCEA DC STEM Scholar **2013**
AFCEA DC

Dean's Scholar **2013**
University of Maryland

Regents Scholar **2013**
University System of Maryland

Relevant Coursework

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|------------------------------------|-----------------------------------|------------------------------------|-------------------------------|
| • Data Visualization | Processing | Processing | • Spanish Linguistics |
| • Computer Vision | • Phonology | • Object-Oriented | • Linear Algebra |
| • Computational Linguistics I & II | • Computational Psycholinguistics | Programming | • Advanced Calculus |
| • Machine Translation | • Natural Language | • Applied Probability & Statistics | • Second-Language Acquisition |
| • Quantum Information | | | |

Technical Skills

Languages: Python, bash, Java, HTML, CSS, JavaScript
Toolkits: Fairseq, PyTorch, Tensorflow, Scikit-learn, OpenCV, Sockeye
Developer Tools: VS Code, Google Cloud Platform, Android Studio
Technologies/Frameworks: Linux, GitHub, Galago, Elasticsearch

Other Skills

Languages: English (native), Spanish (fluent), French (near-fluent), German (conversational), Japanese (beginner)
Music: Bassoon, Clarinet, Piano, GarageBand
Art: Photoshop, Clip Studio, Procreate

Publications

- [1] **Jacob Bremerman**, Xiang Ren, and Jonathan May. [Machine Translation Robustness to Natural Asemantic Variation](#), 2022.
- [2] Antonios Anastasopoulos, Ondřej Bojar, **Jacob Bremerman**, Roldano Cattoni, Maha Elbayad, Marcello Federico, Xutai Ma, Satoshi Nakamura, Matteo Negri, Jan Niehues, Juan Pino, Elizabeth Salesky, Sebastian Stüker, Katsuhito Sudoh, Marco Turchi, Alexander Waibel, Changhan Wang, and Matthew Wiesner. [FINDINGS OF THE IWSLT 2021 EVALUATION CAMPAIGN](#). In *Proceedings of the 18th International Conference on Spoken Language Translation (IWSLT 2021)*, pages 1–29, Bangkok, Thailand (online), August 2021. Association for Computational Linguistics.
- [3] Elizabeth Salesky, Matthew Wiesner, **Jacob Bremerman**, Roldano Cattoni, Matteo Negri, Marco Turchi, Douglas W. Oard, and Matt Post. [The Multilingual TEDx Corpus for Speech Recognition and Translation](#). In *Proc. Interspeech 2021*, pages 3655–3659, 2021.
- [4] **Jacob Bremerman**, Huda Khayrallah, Douglas W. Oard, and Matt Post. [On the Evaluation of Machine Translation n-best Lists](#). In *Proceedings of the First Workshop on Evaluation and Comparison of NLP Systems*, EMNLP, Online, November 2020. ACL.
- [5] **Jacob Bremerman**, Dawn Lawrie, James Mayfield, and Douglas W. Oard. [Two Test Collections for Retrieval Using Named Entity Markup](#). In *Proceedings of the 29th ACM International Conference on Information and Knowledge Management, CIKM '20*, New York, NY, USA, October 2020. Association for Computing Machinery.
- [6] Huda Khayrallah, **Jacob Bremerman**, Arya D. McCarthy, Kenton Murray, Winston Wu, and Matt Post. [The JHU Submission to the 2020 Duolingo Shared Task on Simultaneous Translation and Paraphrase for Language Education](#). In *Proceedings of the Fourth Workshop on Neural Generation and Translation*, pages 188–197, Online, July 2020. ACL.