Jacob Bremerman

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EDUCATION

UNIVERSITY OF MARYLAND, COLLEGE PARK

MS in Computer Science
Aug 2019 - Present | GPA: 4.0
Focus: Natural Language Processing

BS in Physics
BA in Spanish
Aug 2013 - May 2017 | GPA: 3.8
Minor: Mathematics
Citation: Gemstone Honors Program
Citation: Language House Program
Citation: PULSAR Program
HENAAC Scholar
AFCEA DC Scholar
UMD Dean's Scholar
USM Regents Scholar
UMD Physics: Angelo Bardasis Scholar

COURSEWORK

GRADUATE
Data Visualization
Computer Vision
Computational Linguistics I & II
Machine Translation
Quantum Information Processing
Phonology

UNDERGRADUATE
Natural Language Processing
Object-Oriented Programming
Applied Probability & Statistics
Spanish Linguistics
Linear Algebra
Advanced Calculus
Second-Language Acquisition

SKILLS

PROGRAMMING
Languages:
Python • Java • Bash • Matlab
Tools:
Machine Translation: fairseq
Information Retrieval: Elasticsearch, Galago
Machine Learning: PyTorch, Tensorflow, scikit-learn, numpy
Applications: opencv, nltk, spaCy
Data: pandas, matplotlib, excel

HUMAN LANGUAGE
Fluent: English, Spanish, French
Conversational: German
Beginner: Japanese, Korean

RESEARCH

UMD COMPUTATIONAL LINGUISTICS AND INFORMATION PROCESSING (CLIP) LAB | Research Assistant
Aug 2019 - Present | College Park, MD
Work with **Douglas Oard** on evaluation measures and collections of natural language processing and information retrieval tasks.

UNIVERSITY OF MARYLAND | Undergraduate Researcher
Aug 2014 – May 2017 | College Park, MD
Worked with **Bao Yang** on piezoelectric touchscreen design and **Sunhee Kim Fuji** on second-language acquisition for adult learners in immersion.

PROFESSIONAL EXPERIENCE

JOHNS HOPKINS UNIVERSITY | Summer Intern
May 2020 – Aug 2020 | Baltimore, MD
- 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.

HUMAN LANGUAGE TECHNOLOGY CENTER OF EXCELLENCE | Visiting Research Scholar
May 2019 – Aug 2019 | Baltimore, MD

- 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.

UNIVERSITY OF MARYLAND | Honors Program Coordinator
Oct 2017 – May 2019 | College Park, MD

- 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 program evaluation, etc.

PUBLICATIONS

[1] **J. Bremerman** et al. Discovering and Generating Unknown Dimensions of Non-semantic Variation for Machine Translation Diversity. In *UNDER REVIEW*.

[2] **J. Bremerman**, H. Khayrallah, D. W. Oard, and M. 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.

[3] **J. Bremerman**, D. Lawrie, J. Mayfield, and D. 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.

[4] H. Khayrallah, **J. Bremerman**, A. D. McCarthy, K. Murray, W. Wu, and M. 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.