EDWARD HU

edward@edwardjhu.com – Cell: (443) 808-7683
Redmond, WA 98052

RESEARCH EXPERIENCE

Microsoft Research AI, Sept 2019 – Aug 2020
Microsoft Corporation, Redmond, WA
AI Resident

- Accelerate hyperparameter tuning for extremely large models by orders of magnitude, and identify scaling factors that improve training stabilty using infinite-width neural network theories
- Conduct large-scale experiments with distributed and mixed-precision training
- Improve the state-of-the art attacks under the Wasserstein threat model, and collaborate in a unified theory for randomized smoothing, a type of certified adversarial defenses

Center for Language and Speech Processing, Jan 2018 – Aug 2019
Johns Hopkins University, Baltimore, MD
Research Assistant

- Conducted research in monolingual paraphrastic bitext generation and monolingual rewriting, for applications including data augmentation and plagiarism detection
- Built the a large paraphrase dataset with more than 4 billion generated tokens
- Developed an lexically-constrained decoding algorithm 5 times more efficient than the best prior approach while being more accurate
- Implemented AWS Sockeye features including improved lexically-constrained decoding and decoding by sampling
- Recasted over 1,700 text-hypothesis pairs using VerbNet lexicon to gain insights into natural language inference models

EDUCATION

Johns Hopkins University, Baltimore, MD Class of 2019
Bachelor of Science in Computer Science, Cognitive Science

- Cumulative GPA: 3.96/4.00
- Departmental Honors in Comp. Sci., Cog. Sci.
- Member of Upsilon Pi Epsilon, Omega Psi

PUBLICATIONS

- **Improved Image Wasserstein Attacks and Defenses** *(Best Paper Award)*
  J. Edward Hu, Adith Swaminathan, Hadi Salman, Greg Yang ICLR 2020 Workshop
- **Randomized Smoothing of All Shapes and Sizes** *(Long)*
  G. Yang, T. Duan, *J. Edward Hu*, H. Salman, I. Razenshteyn, J. Li ICML 2020
- **Guided Generation of Cause and Effect** *(Long)*
  Z. Li, X. Ding, T. Liu, *J. Edward Hu*, B. Van Durme IJCAI 2020
- **Large-scale, Diverse, Paraphrastic Bitexts via Sampling and Clustering** *(Long/Oral)*
  J. Edward Hu, A. Singh, N. Holzenberger, M. Post, B. Van Durme CoNLL 2019
- **Improved Lexically-Constrained Decoding for Translation and Monolingual Rewriting** *(Long/Poster)* NAACL 2019
  J. Edward. Hu, H. Khayrallah, R. Culkin, P. Xia, T. Chen, M. Post, B. Van Durme
- **ParaBank: Monolingual Bitext Generation and Sentential Paraphrasing via Lexically-constrained Neural Machine Translation** *(Long/Oral)*
  J. Edward Hu, Rachel Rudinger, Matt Post, Benjamin Van Durme AAAI 2019
- **Towards a Unified Natural Language Inference Framework to Evaluate Sentence Representations** *(Long/Oral)* EMNLP 2018
  A. Poliak, A. Haldar, R. Rudinger, *J. Edward. Hu*, E. Pavlick, A. S. White, B. Van Durme

Updated on 7/6/2020