

Zhengxuan (Zen) Wu
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EDUCATION

Stanford University M.S. in Symbolic Systems Program <i>GPA: 4.00/4.00</i> Focus: <i>Cognitive Science and AI</i> Advisors: <i>Chris Potts; Jamil Zaki; Desmond C. Ong</i>	<i>2020/09 - 2022/05</i>
University of Pennsylvania M.S. in Computer Science	<i>2015/09 - 2017/05</i>
Case Western Research University B.S. in Aerospace Engineering	<i>2012/09 - 2015/05</i>

RESEARCH EXPERIENCE

Stanford AI Lab (SAIL) - Graduate Researcher · Building the next-gen sentiment analysis benchmark DynaSent (NAACL21 , ACL21). · Developing program synthesis pipeline to solve ARC task using Knowledge Graph and RL. · Investigating fine-tuning under know label distribution shifts, and compositional generalization with symbolic-neural systems (NeurIPS21).	<i>2020/08 - present</i>
Stanford Social Neurscience Lab - Graduate Researcher · Advancing feature importance attribution methods in BERT-like models for better interpretations. · Led the development of attention and relevance tracing for the Transformer model (BlackboxNLP@EMNLP20). · Led the development of context-guided BERT by proposing novel quasi-attention mechanism (AAAI21). · Built deep learning models for sentiment analysis tasks, including LSTM, VRNN and BERT (IEEE ACII19). · Jointly led the collection of a large story-telling sentiment analysis dataset, SEND (IEEE TAC19).	<i>2018/03 - present</i>
Stanford HCI Lab - Graduate Researcher · Enhanced HabitLab, a personalized productivity intervention system on Chrome browser. · Contributed to study user behavioral changes through online intervention systems (CSCW18 , CHI19 , 21).	<i>2018/03 - 2020/08</i>

PROFESSIONAL EXPERIENCE

VMware, Inc. - Software Engineer III · Developed scalable data-center management platform for Kubernetes clusters.	<i>2017/07 - 2020/09</i>
Swift Capital (Paypal, Inc.) - Machine Learning Intern · Developed machine learning systems to predict the credit scores of loan applicants.	<i>2016/05 - 2016/09</i>

SELECTED MANUSCRIPTS AND PUBLICATIONS¹

- [Zhengxuan Wu](#), Nelson F. Liu, Christopher Potts, “Identifying the Limits of Cross-Domain Knowledge Transfer for Pretrained Models” (Full paper), M.s., Stanford University.
- [Zhengxuan Wu*](#), Elisa Kreiss*, Desmond C. Ong, Christopher Potts, “ReaSCAN: Compositional Reasoning in Language Grounding” (Full paper), ([NeurIPS21](#)).
- Christopher Potts*, [Zhengxuan Wu*](#), Atticus Geiger, Douwe Kiela, “DynaSent: A Dynamic Benchmark for Sentiment Analysis” (Full paper), ([ACL21](#)).
- Douwe Kiela, Max Bartolo, Yixin Nie, Divyansh Kaushik, Atticus Geiger, [Zhengxuan Wu](#), Bertie Vidgen, Grusha Prasad, Amanpreet Singh, Zhiyi Ma, Tristan Thrush, Sebastian Riedel, Zeerak Waseem, Pontus Stenetorp, Robin Jia, Mohit Bansal, Christopher Potts and Adina Williams, “Dynabench: Rethinking Benchmarking in NLP” (Full paper), ([NAACL21](#)).
- Geza Kovacs, [Zhengxuan Wu](#) and Michael S. Bernstein, “Not Now, Ask Later: Users Weaken Their Behavior Change Regimen Over Time, But Believe They Will Imminently Re-Strengthen It ” (Full paper), ([CHI21](#)).

¹*equal contribution

- Zhengxuan Wu, Desmond C. Ong, “Context-Guided BERT for Targeted Aspect-Based Sentiment Analysis” (Full paper), ([AAAI21](#)).
- Zhengxuan Wu, Desmond C. Ong, “Pragmatically Informative Color Generation by Grounding Contextual Modifiers” (Full paper), ([SCiL21](#)).
- Zhengxuan Wu, Thanh-Son Nguyen and Desmond C. Ong, “Structured Self-Attention Weights Encode Semantics in Sentiment Analysis ” (Full paper), ([BlackboxNLP@EMNLP20](#)).
- Zhengxuan Wu, Xiyu Zhang, Zhi-Xuan Tan, Jamil Zaki, Desmond C. Ong, “Attending to Emotional Narratives” (Full paper), ([IEEE ACII19](#)).
- Desmond C. Ong, Zhengxuan Wu, Zhi-Xuan Tan, Marianne Reddan, Isabella Kahhale, Alison Mattek and Jamil Zaki, “Modeling emotion in complex stories: the Stanford Emotional Narratives Dataset” (Full paper), ([IEEE TAC19](#)).
- Geza Kovacs, Drew Mylander Gregory, Zilin Ma, Zhengxuan Wu, Golrokh Emami, Jacob Ray and Michael S. Bernstein, “Conservation of Procrastination: Do Productivity Interventions Save Time or Just Redistribute It?” (Full paper), ([CHI19](#)).
- Geza Kovacs, Zhengxuan Wu and Michael S. Bernstein, “Rotating Online Behavior Change Interventions Increases Effectiveness But Also Increases Attrition” (Full paper), ([CSCW18](#)).
- Erik J. Stalcup, James S. T’ien, Jonathan Jordan, Zhengxuan Wu, Gabriel Nastac and Chengyao Li, “Upward Flame Spread and Extinction over Wavy Solids” (Full paper), ([CST20](#)).

ACADEMIC EXPERIENCE

- Reviewer for CHI 2019
- Invited Abstract Presentation in IC2S2 2019, University of Amsterdam, Netherlands

OPEN SOURCE PROJECTS

Dynabench @ Facebook, Inc. - Contributor

Deep Learning ♦ PyTorch ♦ React ♦ Python

Developing as an individual contributor to the Dynamic Adversarial Benchmarking (Dynabench) Platform launched by Facebook, Inc.

Kaggle - ARC Challenge

Deep Learning ♦ PyTorch ♦ GNN ♦ RL ♦ Program Synthesis

Building artificial general intelligent agents to solve reasoning tasks.

CSI @ Kubernetes - Contributor

Go ♦ C++ ♦ VMware ♦ Kubernetes

Developing large-scale open-source data-center management platform on VMware cloud.

HabitLab @ Stanford HCI - Contributor

HCI ♦ Intervention ♦ Chrome App ♦ RL

Contributed more than 10k+ lines of code to the HabitLab, a app in Chrome for better work efficiency.

TECHNICAL STRENGTHS

- **Program Languages:** Python, C++/C, C, Java, R, Matlab, Haskell, Bash.
- **Machine Learning:** Discriminative and Generative Models (CNN/RNN/LSTM/VAE/GAN/HMM on CUDA); Reinforcement Learning; Multi-task Learning; Graph Neural Networks.
- **AI + Big Data:** PyTorch, scikit-learn, Keras, TensorFlow, NumPy, Pandas, H2O, MapReduce (Hadoop).
- **Data Mining:** PyData, SciPy, SNAP, SQL, NoSQL (Mongo), NetworkX, Jupyter.
- **Data Science:** Mixed Linear Model, Hierarchical Logistic Regression, A/B Testings, Crowdsourcing (MTurk).
- **Server + Database:** Node.js, Flask, MongoDB, PostgreSQL, Kubernetes, Docker, Google Cloud, AWS EC2, Heroku, Azure, Jenkins CICD.
- **Web + Mobile:** HTML/CSS/JS, Polymer, React, Webpack, Apache, Android (Java), Xcode.