

Zhengxuan (Zen) Wu
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EDUCATION

- Stanford University** 2020/09 - 2022/05
M.S. in Symbolic Systems Program *GPA: 4.06/4.00*
Focus: *Cognitive Science and AI*
Advisors: *Prof. Chris Potts; Prof. Jamil Zaki; Prof. Desmond C. Ong*
- University of Pennsylvania** 2015/09 - 2017/05
M.S. in Computer Science
- Case Western Research University** 2012/09 - 2015/05
B.S. in Aerospace Engineering

RESEARCH EXPERIENCE

- Stanford AI Lab (SAIL) - Graduate Researcher** 2020/08 - present
• Building the next-gen sentiment analysis benchmark DynaSent.
• 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.
- Stanford Social Neurscience Lab - Graduate Researcher** 2018/03 - present
• 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](#)).
- Stanford HCI Lab - Graduate Researcher** 2018/03 - 2020/08
• Enhanced HabitLab, a personalized productivity intervention system on Chrome browser.
• Contributed to study user behavioral changes through online intervention systems ([CSCW18](#), [CHI19](#), [21](#)).

PROFESSIONAL EXPERIENCE

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

SELECTED MANUSCRIPTS AND PUBLICATIONS¹

- Christopher Potts*, [Zhengxuan Wu*](#), Atticus Geiger, Douwe Kiela, “DynaSent: A Dynamic Benchmark for Sentiment Analysis” (Full paper), M.s., Stanford University and Facebook AI.
- 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](#)).
- [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](#)).

¹*equal contribution

- 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.