

Zhengxuan (Zen) Wu
Phone: 216-551-7046
Email: wuzhengx@cs.stanford.edu
Website: <https://zen-wu.social/>

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
· Contributing to Facebook open-source platform Dynabench for adversarial sentiment analysis projects.
· Developing program synthesis pipeline to solve ARC task using Knowledge Graph and RL.
· Distilling BERT model using goal-conditioned RL agents to main multi-task performance.
- Stanford Social Neuralscience Lab - Graduate Researcher** 2018/03 - present
· Advancing feature importance attribution methods in BERT-like models for better interpretations.
· Led the development of the Transformer-based multimodal memory fusion model.
· Led the development of attention and relevance tracing for the Transformer model.
· Led the development of context-guided BERT by proposing novel quasi-attention mechanism.
· Built deep learning models for sentiment analysis tasks, including LSTM, VRNN and BERT.
· Jointly led the collection of a large story-telling sentiment analysis dataset, SEND.
- Stanford HCI Lab - Graduate Researcher** 2018/03 - 2020/08
· Enhanced HabitLab, a personalized productivity intervention system on Chrome browser.
· Contributed to analyzing time redistribution effects caused by interventions.
· Improved interventions with adaptive aggressive levels.
· Built models to predict changes in users' intervention preferences over time using Transformer.

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 PUBLICATIONS¹

- Christopher Potts*, Zhengxuan Wu*, Atticus Geiger, Douwe Kiela, "DynaSent: A Dynamic Benchmark for Sentiment Analysis" (Full paper), submitting to *ACL 2021*.
- Zhengxuan Wu, Desmond C. Ong, "On Explaining Your Explanations of BERT: An Empirical Study with Sequence Classification" (Full paper), submitting to *ACL 2021*.
- 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), *CHI 2021*.
- Zhengxuan Wu, Desmond C. Ong, "Context-Guided BERT for Targeted Aspect-Based Sentiment Analysis" (Full paper), *AAAI 2021*.
- Zhengxuan Wu, Desmond C. Ong, "Pragmatically Informative Color Generation by Grounding Contextual Modifiers" (Extended Abstract), *SCiL 2021*.
- Zhengxuan Wu, Thanh-Son Nguyen and Desmond C. Ong, "Structured Self-Attention Weights Encode Semantics in Sentiment Analysis" (Full paper), BlackboxNLP at *EMNLP 2020*.

¹*equal contribution

- Zhengxuan Wu, Xiyu Zhang, Zhi-Xuan Tan, Jamil Zaki, Desmond C. Ong, “Attending to Emotional Narratives” (Full paper), *IEEE ACII 2019*.
- 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 TAC*.
- 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), *CHI 2019*.
- Geza Kovacs, Zhengxuan Wu and Michael S. Bernstein, “Rotating Online Behavior Change Interventions Increases Effectiveness But Also Increases Attrition” (Full paper), *CSCW 2018*.
- 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), *CST 2020*.

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.