**Zhengxuan (Zen) Wu**
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## Education

**Stanford University** *2020/09 - 2022/05*
M.S. in Symbolic Systems Program (*Fully Funded)* GPA: 4.06
*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 Publications

· Zhengxuan Wu, Desmond C. Ong, "Context-Guided BERT for Targeted Aspect-Based Sentiment Analysis" (Full paper), in review *AAAI 2021*.
· Zhengxuan Wu, Desmond C. Ong, "Pragmatically Informative Color Generation by Grounding Contextual Modifiers" (Full paper), in review *SCiL 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), in review *CHI 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*.
· 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 invidual 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**
**Deep Learning ◇ Caffe ◇ CNN ◇ Computer Vision**
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.