Pei-Hao (Eddy) Su

E-mail: eddy.phs@gmail.com Website: https://eddy0613.github.io/

Industry and Research Experience

2017-Present | Co-founder at PolyAI, London (polyai.com)
Machine Learning Platform for Conversational AI
Series B company with $30M+ fund, building multilingual entreprise-ready voice assistants

2017-2018 | Entrepreneur in Residence at Entrepreneur First, London

2014-2018 | Ph.D. Researcher at Dialogue Systems Group, Cambridge
Statistical Dialogue Management for Spoken Dialogue Systems
Utilise deep reinforcement learning and Gaussian process for modelling dialogue. Focus on inferencing reward from user goal in real world for on-line dialogue policy optimisation and speedup [P2-P5].

2017 Summer | Research Intern at Facebook AI Research, Menlo Park

2011-2013 | Research Assistant at Digital Speech Processing Lab, NTU
Personalized Dialogue Game for Computer-Assisted Language Learning
Implemented MDP-based dialogue manager combined with Chinese pronunciation evaluator to recommend personalised sentences for pronunciation practicing in a dialogue [P1, P6-P10].

Summer 2012 | Software Engineer Intern at Trend Micro Inc., Taipei
Designed automatic stress testing on business cloud storage. Awarded Best Intern in final evaluation.

Education

2014-2018 **University of Cambridge**, Cambridge, U.K.
Ph.D. in Engineering | Dialogue Systems Group | Queens' College
Supervisor: Professor Steve Young
Thesis: Reward estimation and reinforcement learning for dialogue systems
Research: Deep reinforcement learning, Gaussian processes, Dialogue, NLP

2012-2013 **National Taiwan University (NTU)**, Taipei, Taiwan
M.Sc. in Communication Engineering | Digital Speech Processing Lab
Supervisor: Professor Lin-shan Lee
Thesis: Personalised dialogue game for pronunciation training, Gpa: 4.0/4.0

2007-2012 B.Sc. in Electrical Engineering
Focused on speech processing and dialogue game, Gpa: 3.9/4.0

Teaching Experience

2016-2017 | Supervisor, Engineering Department and Murray Edwards College, Cambridge University
Course: Introduction to Python. Contribute to teaching female undergrads in engineering.
Courses: Statistical Dialogue Systems, Reinforcement Learning (both 30+ MPhil students)
Thesis: Sample-efficient Reinforcement Learning for Dialogue Management (2 MPhil students)

2012, 2013 | Teaching Assistant, EECS, NTU
Course: Introduction to Digital Speech Processing (160+ enrolled students)
Course: Special Project on Digital Speech Processing (topics on dialogue systems)

Awards and Honours

2019 **Company of the Year**, *Cambridge Computer Lab Ring*
2016 **Best Student Paper Award**, *ACL*
2016 **W. G. Collins Endowment Fund Award**, *Cambridge University Engineering Dept.*
2015 **Interspeech Tavel Award**, *ISCA*
2014-17 **Taiwan Cambridge Scholarship**, *Cambridge Trust & MOE, Taiwan*
2012 **Advanced Speech Technologies Scholarship**, *EECS, NTU*
2008 **Dean's List**, *NTU*

Selected Publications

First author only, see the full list of my publications at Google Scholar page.

1. M. Henderson, I. Casanueva, N. Mrkšic, P.-H. Su, T.-H. Wen, and I. Vulic, ConveRT: Efficient and Accurate Conversational Representations from Transformers, **EMNLP 2020**
2. M. Henderson, P. Budzianowski, I. Casanueva, S. Coope, D. Gerz, G. Kumar, N. Mrkšic, G. Spithourakis, P.-H. Su, I. Vulic, and T.-H. Wen, A Repository of Conversational Datasets, **ACL workshop NLP for ConvAI 2019**
3. M. Henderson, I. Vulic, D. Gerz, I. Casanueva, P. Budzianowski, S. Coope, G. Kumar, G. Spithourakis, T.-H. Wen, N. Mrkšic, and P.-H. Su, Training Neural Response Selection for Task-Oriented Dialogue Systems, **ACL 2019**
4. P.-H. Su, M. Gasic, and S. Young, Reward Estimation for Dialogue Policy Optimisation, **Computer Speech and Language**
5. P.-h. Su, C.-h. Wu, and L.-s. Lee, A Recursive Dialogue Game for Personalized Computer-Aided Pronunciation Training, **IEEE TASLP, January 2015**
6. P.-H. Su, M. Gasic, N. Mrksic, L. Rojas, S. Ultes, D. Vandyke, T.-H. Wen, and S. Young, On-line Active Reward Learning for Policy Optimisation in Spoken Dialogue Systems, **ACL 2016 (Best Student Paper Award)**
7. P.-H. Su, D. Vandyke, M. Gasic, N. Mrksic, T.-H. Wen, and S. Young, Reward Shaping with Recurrent Neural Networks for Speeding up On-Line Policy Learning in SDS, **SigDial 2015**
8. P.-h. Su, Y.-B. Wang, T.-H. Wen, T.-h. Yu, and L.-s. Lee, A Recursive Dialogue Game Framework with Optimal Policy Offering Personalized CALL, **Interspeech 2013**

Invited Talks

- **Democratising Conversational AI / Practical Approaches to Conversational AI** - ODSC London, Cambridge LTL Lab, South England NLP Meetup
- **Reward Estimation for Dialogue Policy Optimisation** - General Motor Advanced Technical Centre Israel, DeepHack.Turing Summer School Moscow
- **On-line Active Reward Learning for Policy Optimisation in SDS** - Toshiba Research Cambridge, Microsoft Research Montreal, University of Cambridge Computer Lab
- **Practical Human-in-the-loop Reinforcement Learning for SDS** - Apple Siri, Cambridge
- **Practical and Scalable Reinforcement Learning for SDS** - Academia Sinica Taiwan, NTU
- **Beyond Siri: Towards Fully Data-driven Conversational Agents** - Queens' College, Cambridge

Proficiency

Leadership: Co-founder at a series-B startup, Vice President at Cambridge Taiwanese Society
Skills: Tech Management, ML Deployment, Applied Research, Scientific Writing
Services: ACL & IEEE Member, Reviewer for ACL/EACL/NAACL/EMNLP 2018-Present
Language: English (fluent), Chinese (native), Taiwanese (native)

References

Available upon request