Panupong (Ice) Pasupat

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EDUCATION

Stanford University — Stanford, CA
Pursuing Doctor of Philosophy in Computer Science — *2013-present*

Massachusetts Institute of Technology — Cambridge, MA
Bachelor of Science in Electrical Engineering and Computer Science (GPA 5.0/5.0) — *2009-2013*

EXPERIENCE

Messenger Team, Facebook — Menlo Park, CA
Software Engineering Intern — *2018*

- Improved a neural shift-reduce model for parsing sentences into hierarchical intent-slot semantic representation.
- Analyzed common errors, and designed new top-down and bottom-up parsing algorithms to address the errors.

Google Research, Google — Mountain View, CA
Software Engineering Intern — *2015*

- Developed deep learning models in TensorFlow for paraphrase detection.
- Proposed negative sampling methods using linguistic resources to better distinguish closely related words.
- Demonstrated how appropriate combinations of model choices and negative samplers improve the accuracy.

Speech and Dialog Research Group, Microsoft Research — Mountain View, CA
Research Intern — *2014*

- Bootstrapped classifiers for detecting knowledge base relations in spoken queries in an unsupervised fashion.
- Mined queries from search engine query click logs and automatically labeled relations using distant supervision from knowledge graphs.

Natural Language Processing Laboratory, Tokyo Institute of Technology — Yokohama, Japan
Exchange Student — *2013*

- Experimented on Tweet sentiment analysis using different classifiers and features.
- Applied structural correspondent learning to incorporate unlabeled data to the classifier.

Spoken Language Systems Group, MIT Computer Science & Artificial Intelligence Lab — Cambridge, MA
Researcher, Intern — *2012*

- Designed web interfaces on Amazon Mechanical Turk to collect spoken sentences and their semantic labeling.
- Trained sequence tagging models by implementing features for conditional random fields, resulting in English and Chinese models for categorizing words in speech queries.
- Deployed the models in speech-enabled mobile applications for movie, flight, and restaurant recommendation.

SELECTED PUBLICATIONS

Reinforcement Learning on Web Interfaces using Workflow-Guided Exploration — ICLR
E. Liu, K. Guu*, P. Pasupat*, T. Shi, P. Liang (*equal contribution)* — *2018*

- Designed and implemented a novel exploration algorithm for reinforcement learning agents, which reduces the amount of expert demonstrations needed by 100x.
- Improved and open-sourced the MiniWoB++ Web interface interaction benchmark for reinforcement learning.

Compositional Semantic Parsing on Semi-Structured Tables — ACL
P. Pasupat, P. Liang — *2015*

Inferring Logical Forms From Denotations — ACL
P. Pasupat, P. Liang — *2016*

Macro Grammars and Holistic Triggering for Efficient Semantic Parsing — EMNLP
Y. Zhang, P. Pasupat, P. Liang — *2017*

- The three publications above propose machine learning models for answering complex natural language questions based on the information in a given Web table.
- Proposed novel algorithms to flexibly handle lexical and syntactic mismatches, filter misleading solutions that sometimes give correct answers, and reuse parts of good solutions to speed up the model.

Complete list of publications: https://ppasupat.github.io/#publication

SKILLS

- **Computer Languages:** Python (TensorFlow, PyTorch), Java, JavaScript
- **Languages:** Thai (native speaker), English (fluent), Japanese (intermediate), Chinese (beginner)