Panupong (Ice) Pasupat

720 Serra St., Apt 216, Stanford CA 94305
ppasupat@cs.stanford.edu | (+1) 857-919-5187
https://ppasupat.github.io

Education

Stanford University — **Stanford, CA**
Ph.D. Candidate in Computer Science — 2013–2019 (expected)
Advisor: Percy Liang

Massachusetts Institute of Technology — **Cambridge, MA**
B.S. in Electrical Engineering and Computer Science — 2009–2013
B.S. in Mathematics (double major)
GPA: 5.0 / 5.0

Conference Papers

Mapping Natural Language Commands to Web Elements
Panupong Pasupat, Tian-Shun Jiang, Evan Liu, Kelvin Guu, Percy Liang
Empirical Methods on Natural Language Processing (EMNLP), 2018

Reinforcement Learning on Web Interfaces using Workflow-Guided Exploration
Evan Zheran Liu*, Kelvin Guu*, Panupong Pasupat*, Tianlin Shi, Percy Liang (* = equal contribution)
International Conference on Learning Representations (ICLR), 2018

Macro Grammars and Holistic Triggering for Efficient Semantic Parsing
Yuchen Zhang, Panupong Pasupat, Percy Liang
Empirical Methods on Natural Language Processing (EMNLP), 2017

From Language to Programs: Bridging Reinforcement Learning and Maximum Marginal Likelihood
Kelvin Guu, Panupong Pasupat, Evan Zheran Liu, Percy Liang
Association for Computational Linguistics (ACL), 2017

Inferring Logical Forms From Denotations
Panupong Pasupat, Percy Liang
Association for Computational Linguistics (ACL), 2016

Simpler Context-Dependent Logical Forms via Model Projections
Reginald Long, Panupong Pasupat, Percy Liang
Association for Computational Linguistics (ACL), 2016

Compositional Semantic Parsing on Semi-Structured Tables
Panupong Pasupat, Percy Liang
Association for Computational Linguistics (ACL), 2015

Unsupervised Relation Detection Using Automatic Alignment of Query Patterns Extracted from Knowledge Graphs and Query Click Logs
Panupong Pasupat, Dilek Hakkani-Tür
Interspeech, 2015

Zero-Shot Entity Extraction from Web Pages
Panupong Pasupat, Percy Liang
Association for Computational Linguistics (ACL), 2014

Query Understanding Enhanced by Hierarchical Parsing Structures
Jingjing Liu, Panupong Pasupat, Yining Wang, Scott Cyphers, Jim Glass
Automatic Speech Recognition and Understanding Workshop (ASRU), 2013

ASGARD: a Portable Architecture for Multilingual Dialogue Systems
Jingjing Liu, Panupong Pasupat, Scott Cyphers, Jim Glass
International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2013

A Conversational Movie Search System Based on Conditional Random Fields
Jingjing Liu, Scott Cyphers, Panupong Pasupat, Ian Mcgraw, Jim Glass
Interspeech, 2012

Work Experience

Google AI, Google **Mountain View, CA**
Research Scientist starting June 2019

Facebook Conversational AI, Facebook **Menlo Park, CA**
Research 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 Lab, Tokyo Institute of Technology **Yokohama, Japan**
Exchange Student 2013
- Experimented on Tweet sentiment analysis using different classifiers and features.
- Applied structural correspondence learning to incorporate unlabeled data.

Spoken Language Systems Group, MIT CSAIL Lab **Cambridge, MA**
Researcher Intern 2012–2013
- 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.

Dropbox Inc. **San Francisco, CA**
Engineering Intern 2011
- Wrote scripts to periodically analyze the usage pattern of Dropbox users.
- Investigated methods to optimize the data calculation and caching system for the analytics team.
- Implemented bug filtering and email notification system in the error log viewer, making critical errors get fixed faster.

Reflective Commonsense Thinking, MIT Media Lab **Cambridge, MA**
Researcher Intern 2010
- Implemented algorithms to solve error-correcting subgraph isomorphism and analogical matching problems.
- Applied the algorithms on analogy problems, enabling the system to make decisions based on past experiences.

Language of Thought, MIT Department of Linguistics **Cambridge, MA**
Researcher Intern 2010
- Designed algorithms to automatically measure vowel formant frequencies from sound files in order to observe the patterns and constraints of vowels in spoken languages.
- Designed online experiments on Amazon Mechanical Turk to study the sound constraints during language acquisition.

Honors and Awards

Putnam Mathematical Competition
Ranked 23rd 2009

International Olympiad in Informatics (IOI)
Gold Medal (Ranked 2nd) 2008

International Mathematical Olympiad (IMO)
Gold Medal 2007
2 Silver Medals 2005, 2006

Teaching Experience

Information Retrieval and Web Search (CS 276) **Stanford University**
Head Course Assistant Spring 2016

Artificial Intelligence: Principles and Techniques (CS 221) **Stanford University**
Head Course Assistant Fall 2014

Services

Conference Reviewer
North American Chapter of the Association for Computational Linguistics (NAACL), 2019
Conference on Automated Knowledge Base Construction (AKBC), 2019
Association for Computational Linguistics (ACL), 2018
Joint Conference on Lexical and Computational Semantics (*SEM), 2018
Empirical Methods on Natural Language Processing (EMNLP), 2017
Association for Computational Linguistics (ACL), 2017
Association for Computational Linguistics (ACL), 2016
Empirical Methods on Natural Language Processing (EMNLP), 2015

International Mathematical Olympiad (IMO) **Chiang Mai, Thailand**
Coordinator and Grader 2015

Skills

Programming: fluent in Python (TensorFlow, PyTorch), Java, JavaScript
Languages: Thai (native), English (fluent), Japanese (intermediate), Chinese (beginner)