Yewen (Evan) Pu
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EDUCATION

Massachusetts Institute of Technology

PhD. Computer Science, expected: 2019

- Research Area: Active Learning, Program Synthesis, AI
- Advisor: Armando Solar-Lezama

Selected Coursework:
Machine Learning Natural Language Processing Computational Cognitive Science

University of California: Berkeley

B.A. Computer Science, Dec 2011

B.A. Mathematics, Dec 2011, With High Honor

RESEARCH

Learning to Select Examples for Program Synthesis
From a big dataset of input-output examples, our approach selects a representative subset to give to a combinatorial synthesizer, reducing overhead cost while preserving correctness.
https://arxiv.org/abs/1711.03243 *in submission*
Yewen Pu, Zachery Miranda, Armando Solar-Lezama, Leslie Pack Kaelbling

Inverse Procedural Modeling via Program Synthesis
From a high resolution triangle-mesh 3D rendering, we recover the underlying constructive-solid-geometry representation by combining geometric pre-processing and program synthesis.
in submission
Tao Du, Jeevana Priya Inala, Yewen Pu, Andrew Spielberg, Adriana Schulz, Wojciech Matusik, Armando Solar-Lezama

Learning to Acquire Information
We tackle the problem of active learning in the face of complex hypothesis space by learning inter-relations between observations instead, bypassing the complex hypothesis space.
https://arxiv.org/abs/1704.06131 *UAI 2017*
Yewen Pu, Leslie Pack Kaelbling, Armando Solar-Lezama

A Neural Program Corrector for MOOCs
We correct a program by altering (via replacement, insertion, deletions) statements so that the resulting program has fragments of codes that "look like" that of a correct program.
https://arxiv.org/abs/1607.02902 *OOPSLA 2016 workshop*
Yewen Pu, Karthik Narasimhan, Armando Solar-Lezama, Regina Barzilay

Synthesis of biological models from mutation experiments
We show how to automatically synthesize a concurrent in-silico model for cell development given in-vivo experiments of how particular mutations influence the experiment outcome.
https://dl.acm.org/citation.cfm?id=2429125 *POPL 2013*
Ali Sinan Koksal, Yewen Pu, Saurabh Srivastava, Rastislav Bodik, Jasmin Fisher, and Nir Piterman

Synthesis of first-order dynamic programming algorithms
We show that first-order dynamic programming algorithms can be automatically derived by program synthesis by encoding the recurrence relation as a template in the Sketch solver.
http://dl.acm.org/citation.cfm?id=2048076 *OOPSLA 2011*
Yewen Pu, Rastislav Bodik, and Saurabh Srivastava

PAST JOBS

Google

Software Engineer Intern **June 2013 – August 2013**

- Department: Google Advertisement
- Project: Evaluation of features that predicts conversion of customers

University of California: Berkeley

Undergraduate Researcher, U.C. Berkeley Par Lab **March 2010 – June 2012**

- Area of Research: Synthesis of software programs from user specifications
- Adviser: Ras Bodík, `http://www.cs.berkeley.edu/~bodik/`

Team Member, U.C. Berkeley Overmind **June 2010 – Sept 2010**

- Project: Designed AI modules for the Overmind, an agent that plays Starcraft.
- Highlights: Winner of AIIDE 2010 StarCraft AI Competition, coverage by Ars Technica.
- Website: `http://overmind.cs.berkeley.edu/`

GENERAL

Programming

- Currently: PyTorch, TensorFlow, Python, Z3
- Have developed in past: Java, Julia, C++, Scala, Lisp, Javascript
- Sufficient Familiarities: Web Stack (front / back ends), Android / iOS

Projects

- a dataset of manually collected 1000 hand drawn sketches of pineapples: `https://github.com/evanthebouncy/pineapples`
- Dota 2 heros semantic embedding: `https://github.com/evanthebouncy/dota_hero_semantic_embedding`

PERSONAL

I enjoy playing and composing music on my guitar.

WEBSITE

`www.mit.edu/~yewenpu`