

# Yewen (Evan) Pu

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<https://evanthebouncy.github.io/>

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## Employment

<b>Autodesk Research</b> Senior Research Scientist <ul style="list-style-type: none"><li>- code generation for computer-aided designs</li><li>- industry scale multi-modal data curation for instruction tuning</li></ul>	2020 -
<b>Massachusetts Institute of Technology</b> Postdoctoral Researcher <ul style="list-style-type: none"><li>- program synthesis and computational cognitive science</li></ul>	2019 - 2020
<b>Massachusetts Institute of Technology</b> Graduate Student Researcher <ul style="list-style-type: none"><li>- program synthesis and active learning</li></ul>	2012 - 2019
<b>Learable.ai</b> Machine Learning Advisor <ul style="list-style-type: none"><li>- ML + building data annotation pipeline for ML</li></ul>	2018 - 2019
<b>Microsoft Research</b> Research Intern	2018 summer

## Education

<b>Massachusetts Institute of Technology</b> PhD of Computer Science Advisors: Armando Solar-Lezama, Leslie Kaelbling	2019
<b>University of California, Berkeley</b> B.A. of Computer Science B.A. of Mathematics (with high honor)	2011

## Selected Publications

ECCV 2024	Sifan Wu, Amir Hosein Khasahmadi, Mor Katz, Pradeep Kumar Jayaraman, <a href="#">Yewen Pu</a> , Karl Willis, Bang Liu
	CadVLM: Bridging Language and Vision in the Generation of Parametric CAD Sketches

C&C 2024	William McCarthy, Justin Matejka, Karl Willis, Judith Fan, <a href="#">Yewen Pu</a> Communicating Design Intent Using Drawing and Text
ICML 2024	<a href="#">Yewen Pu</a> , Saujas Vaduguru, Priyan Vaithilingam, Elena Glassman, Daniel Fried Amortizing Pragmatic Program Synthesis with Rankings
ICLR 2024	Ruocheng Wang, Eric Zelikman, Gabriel Poesia, <a href="#">Yewen Pu</a> , Nick Haber, Noah D Goodman Hypothesis search: Inductive reasoning with language models
ICLR 2024	Saujas Vaduguru, Daniel Fried, <a href="#">Yewen Pu</a> Generating Pragmatic Examples to Train Neural Program Synthesizers
NeurIPS 2023	Di Huang, Ziyuan Nan, Xing Hu, Pengwei Jin, Shaohui Peng, Yuanbo Wen, Rui Zhang, Zidong Du, Qi Guo, <a href="#">Yewen Pu</a> , Yunji Chen ANPL: Towards Natural Programming with Interactive Decomposition
NeurIPS 2023	Zhiao Huang, Feng Chen, <a href="#">Yewen Pu</a> , Chunru Lin, Hao Su, Chuang Gan DiffVL: scaling up soft body manipulation using vision-language driven differentiable physics
NeurIPS 2022 (Oral)	Sam Acquaviva*, <a href="#">Yewen Pu</a> *, Marta Kryven, Theodoros Sechopoulos, Catherine Wong, Gabrielle Ecanow, Maxwell Nye, Michael Tessler, Josh Tenenbaum Communicating natural programs to humans and machines
SIGGRAPH 2021	Karl DD Willis, <a href="#">Yewen Pu</a> , Jieliang Luo, Hang Chu, Tao Du, Joseph G Lambourne, Armando Solar-Lezama, Wojciech Matusik Fusion 360 gallery: A dataset and environment for programmatic cad construction from human design sequences
NeurIPS 2021	Yichen Yang, Jeevana Priya Inala, Osbert Bastani, <a href="#">Yewen Pu</a> , Armando Solar-Lezama, Martin Rinard Program synthesis guided reinforcement learning for partially observed environments

ICLR 2021	Maxwell Nye, <u>Yewen Pu</u> , Matthew Bowers, Jacob Andreas, Joshua B Tenenbaum, Armando Solar-Lezama Representing partial programs with blended abstract semantics
NeurIPS 2020	Jeevana Priya Inala, Yichen Yang, James Paulos, <u>Yewen Pu</u> , Osbert Bastani, Vijay Kumar, Martin Rinard, Armando Solar-Lezama Neurosymbolic Transformers for Multi-Agent Communication
NeurIPS 2020	<u>Yewen Pu</u> , Kevin Ellis, Marta Kryven, Josh Tenenbaum, Armando Solar-Lezama Program synthesis with pragmatic communication
NeurIPS 2019	Kevin Ellis*, Maxwell Nye*, <u>Yewen Pu</u> *, Felix Sosa*, Josh Tenenbaum, Armando Solar-Lezama Write, execute, assess: Program synthesis with a repl
NeurIPS 2019	Charith Mendis, Cambridge Yang, <u>Yewen Pu</u> , Dr Saman Amarasinghe, Michael Carbin Compiler auto-vectorization with imitation learning
NeurIPS 2018	Osbert Bastani, <u>Yewen Pu</u> , Armando Solar-Lezama Verifiable reinforcement learning via policy extraction
SIGGRAPH Asia 2018	Tao Du, Jeevana Priya Inala, <u>Yewen Pu</u> , Andrew Spielberg, Adriana Schulz, Daniela Rus, Armando Solar-Lezama, Wojciech Matusik Inversecsg: Automatic conversion of 3d models to csg trees
ICML 2018 (Oral)	<u>Yewen Pu</u> , Zachery Miranda, Armando Solar-Lezama, Leslie Kaelbling Selecting representative examples for program synthesis
UAI 2017	<u>Yewen Pu</u> , Leslie P Kaelbling, Armando Solar-Lezama Learning to acquire information
OOPSLA 2016 (workshop)	<u>Yewen Pu</u> , Karthik Narasimhan, Armando Solar-Lezama, Regina Barzilay

sk\\_p: a neural program corrector for MOOCs

POPL 2013      Ali Koksai, [Yewen Pu](#), Saurabh Srivastava, Rastislav Bodik, Jasmin Fisher, Nir Piterman  
Synthesis of biological models from mutation experiments

OOPSLA 2011      [Yewen Pu](#), Rastislav Bodik, Saurabh Srivastava  
Synthesis of first-order dynamic programming algorithms

## Preprints

arxiv 2024      Xianghao Xu, Aditya Ganeshan, Karl DD Willis, [Yewen Pu](#), Daniel Ritchie  
Creating Language-driven Spatial Variations of Icon Images

arxiv 2023      Leonardo Hernandez Cano, [Yewen Pu](#), Robert Hawkins, Josh Tenenbaum, Armando Solar-Lezama  
Building Community Driven Libraries of Natural Programs

arxiv 2023      Priyan Vaithilingam, [Yewen Pu](#), Elena L Glassman  
The Usability of Pragmatic Communication in Regular Expression Synthesis

## Invited Talks

Pragmatic Program Synthesis      2024 May  
@ Design Lab Research Meeting Invited Guest Talk

Pragmatic Program Synthesis      2024 May  
@ Vienna University of Technology

Pragmatic Program Synthesis      2024 May  
@ Cocosci Lunch / MIT

Pragmatic Program Synthesis      2024 March  
@ Neuro-Symbolic Seminar / MIT

Pragmatic Program Synthesis      2024 Feb  
@ UCSD PL Seminar

Natural Programming in Communicating Designs      2023 June  
@ 2023 Frontiers in Design Representation Summer School

Programming as Collaborative Search @ Stanford cocolab	2023 April
Communicating Natural Programs to Humans and Machines @ carper.ai	2022 Nov
LARC : Language annotated Abstraction and Reasoning Corpus @ MIT cocosci	2021 April
Program Synthesis with Pragmatic Communication @ MIT Cpl-lab	2021 Jan
Program Synthesis with Pragmatic Communication @ Ras Bodik Group @ University of Washington	2020 Nov
Program Synthesis with Pragmatic Communication @ PL Seminar @ UCSD	2020 Oct
Program Synthesis with Pragmatic Communication @ Stanford cocolab	2020 Aug
Program Synthesis with Pragmatic Communication @ Variation Lab @ Harvard SEAS	2020 June
Program Synthesis as Communication @ Autodesk	2020 March
Program Synthesis as Communication @ Deepmind	2019 Dec
Program Synthesis : From Communication to Computation @ Machine Programming Group @ Intel Labs	2019 Nov
Write, Execute, Assess: Program Synthesis with a REPL @ Google Brain	2019 Oct
Write, Execute, Assess: Program Synthesis with a REPL @ Facebook	2019 Oct

## Advising

(CMU) Saujas Vaduguru, with Daniel Fried	2021 -
(MIT) Leonardo Hernández Cano, with Armando Solar-Lezama	2020 -
(CAS) Di Huang	2022 -

(Cornell) WenDing Li, with Kevin Ellis	2024 -
(Stanford) Rio Aguina-kang, with Judith Fan	2024 -
(Brown) Xianghao Xu, with Daniel Ritche	2023 -
(UCSD) William McCarthy, with Judith Fan	2023 - 2024
(MIT) Sam Acquaviva, with Josh Tenenbaum	2020 - 2024
(Stanford) Ruocheng Wang, with Noah Goodman	2023 - 2023
(UCSD) Zhiao Huang, with Chuang Gan	2023 - 2023
(Harvard) Priyan Vaithilingam, with Elena Glassman	2022 - 2023

## Services

### Thesis Committee

Samuel Acquaviva, 2024 (Master)	Massachusetts Institute of Technology
Fernando Abigail Galicia Mendoza, 2023 (PhD)	Universidad Nacional Autónoma de México

### Reviewer

NeurIPS	2018 -
ICML	2018 -
ICLR	2020 -
CogSci	2022 -
AAAI	2023
UIST	2023 -
ACL / EMNLP	2023 -
UAI	2018