

Curriculum Vitae

Yewen (Evan) Pu | 濮燚文

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

Employment

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

Education

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

Selected Publications

Arxiv	Wen-Ding Li, Keya Hu, Carter Larsen, Yuqing Wu, Simon Alford, Caleb Woo, Spencer M Dunn, Hao Tang, Michelangelo Naim, Dat Nguyen, Wei-Long Zheng, Zenna Tavares, <u>Yewen Pu</u> , Kevin Ellis
	Combining induction and transduction for abstract reasoning
ECCV 2024	Sifan Wu, Amir Hosein Khasahmadi, Mor Katz, Pradeep Kumar Jayaraman, <u>Yewen Pu</u> , 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, <u>Yewen Pu</u>
	Communicating Design Intent Using Drawing and Text
ICML 2024	<u>Yewen Pu</u> , Saujas Vaduguru, Priyan Vaithilingam, Elena Glassman, Daniel Fried
	Amortizing Pragmatic Program Synthesis with Rankings
ICLR 2024	Ruocheng Wang, Eric Zelikman, Gabriel Poesia, <u>Yewen Pu</u> , Nick Haber, Noah D Goodman
	Hypothesis search: Inductive reasoning with language models
ICLR 2024	Saujas Vaduguru, Daniel Fried, <u>Yewen Pu</u>
	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, <u>Yewen Pu</u> , Yunji Chen
	ANPL: Towards Natural Programming with Interactive Decomposition
NeurIPS 2023	Zhiao Huang, Feng Chen, <u>Yewen Pu</u> , Chunru Lin, Hao Su, Chuang Gan
	DiffVL: scaling up soft body manipulation using vision-language driven differentiable physics
NeurIPS 2022 (Oral)	Sam Acquaviva*, <u>Yewen Pu</u> *, Marta Kryven, Theodoros Sechopoulos, Catherine Wong, Gabrielle Ecanow, Maxwell Nye, Michael Tessler, Josh Tenenbaum

	Communicating natural programs to humans and machines
SIGGRAPH 2021	<p>Karl DD Willis, Yewen Pu, Jieliang Luo, Hang Chu, Tao Du, Joseph G Lambourne, Armando Solar-Lezama, Wojciech Matusik</p> <p>Fusion 360 gallery: A dataset and environment for programmatic cad construction from human design sequences</p>
CVPR 2021	<p>Karl DD Willis, Pradeep Kumar Jayaraman, Joseph G Lambourne, Hang Chu, Yewen Pu</p> <p>Engineering sketch generation for computer-aided design</p>
NeurIPS 2021	<p>Yichen Yang, Jeevana Priya Inala, Osbert Bastani, Yewen Pu, Armando Solar-Lezama, Martin Rinard</p> <p>Program synthesis guided reinforcement learning for partially observed environments</p>
ICLR 2021	<p>Maxwell Nye, Yewen Pu, Matthew Bowers, Jacob Andreas, Joshua B Tenenbaum, Armando Solar-Lezama</p> <p>Representing partial programs with blended abstract semantics</p>
NeurIPS 2020	<p>Jeevana Priya Inala, Yichen Yang, James Paulos, Yewen Pu, Osbert Bastani, Vijay Kumar, Martin Rinard, Armando Solar-Lezama</p> <p>Neurosymbolic Transformers for Multi-Agent Communication</p>
NeurIPS 2020	<p>Yewen Pu, Kevin Ellis, Marta Kryven, Josh Tenenbaum, Armando Solar-Lezama</p> <p>Program synthesis with pragmatic communication</p>
NeurIPS 2019	<p>Kevin Ellis*, Maxwell Nye*, Yewen Pu*, Felix Sosa*, Josh Tenenbaum, Armando Solar-Lezama</p> <p>Write, execute, assess: Program synthesis with a repl</p>
NeurIPS 2019	<p>Charith Mendis, Cambridge Yang, Yewen Pu, Dr Saman Amarasinghe, Michael Carbin</p> <p>Compiler auto-vectorization with imitation learning</p>
NeurIPS 2018	<p>Osbert Bastani, Yewen Pu, Armando Solar-Lezama</p> <p>Verifiable reinforcement learning via policy extraction</p>

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, <u>Yewen Pu</u> , Saurabh Srivastava, Rastislav Bodik, Jasmin Fisher, Nir Piterman Synthesis of biological models from mutation experiments
OOPSLA 2011	<u>Yewen Pu</u> , Rastislav Bodik, Saurabh Srivastava Synthesis of first-order dynamic programming algorithms

Preprints

arxiv 2024	Xianghao Xu, Aditya Ganeshan, Karl DD Willis, <u>Yewen Pu</u> , Daniel Ritchie Creating Language-driven Spatial Variations of Icon Images
arxiv 2023	Leonardo Hernandez Cano, <u>Yewen Pu</u> , Robert Hawkins, Josh Tenenbaum, Armando Solar-Lezama Building Community Driven Libraries of Natural Programs
arxiv 2023	Priyan Vaithilingam, <u>Yewen Pu</u> , Elena L Glassman The Usability of Pragmatic Communication in Regular Expression Synthesis

Invited Talks

Curating human-human instruction dataset @ CMU Language Technologies Institute Colloquium	2024 Nov
Code Generation Inspired by Human Communication @ Stanford CogToolsLab	2024 Aug
Pragmatic Program Synthesis @ Boston Computation Club	2024 July
Code Generation Inspired by Human Communication @ Berkeley NLP Lunch	2024 July
Pragmatic Program Synthesis @ UCSD Design Lab Research Invited Guest Talk	2024 May
Pragmatic Program Synthesis @ Vienna University of Technology	2024 May
Pragmatic Program Synthesis @ Cocosci Lunch / MIT	2024 May
Pragmatic Program Synthesis @ Neuro-Symbolic Seminar / MIT	2024 March
Pragmatic Program Synthesis @ UCSD PL Seminar	2024 Feb
Natural Programming in Communicating Designs @ 2023 Frontiers in Design Representation Summer School	2023 June
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 -
(Berkeley) Rodolfo (Rudy) Corona, with Dan Klein	2024 -
(Cornell) WenDing Li, with Kevin Ellis	2024 -
(Cornell) Keya Hu, with Kevin Ellis	2024 -
(Stanford) Rio Aguina-kang, with Judith Fan	2024 -
(Brown) Xianghao Xu, with Daniel Ritchie	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