

Yewen (Evan) Pu

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

Employment

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| Autodesk Research | 2020 - |
| Senior Research Scientist | |
| <ul style="list-style-type: none">- code generation for computer-aided designs- industry scale multi-modal data curation for instruction tuning | |
| 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 | |
| Learnable.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

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| 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

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| 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 |

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| 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 | Karl DD Willis, <u>Yewen Pu</u> , 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, <u>Yewen Pu</u> , Armando Solar-Lezama, Martin Rinard Program synthesis guided reinforcement learning for partially observed environments |

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| 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 Koksal, [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

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| Code Generation Inspired by Human Communication @ Berkeley NLP Lunch | 2024 July |
| Pragmatic Program Synthesis @ Design Lab Research Meeting 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 |

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| 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

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| (CMU) Saujas Vaduguru, with Daniel Fried | 2021 - |
| (MIT) Leonardo Hernández Cano, with Armando Solar-Lezama | 2020 - |

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| (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 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

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

Reviewer

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| NeurIPS | 2018 - |
| ICML | 2018 - |
| ICLR | 2020 - |
| CogSci | 2022 - |
| AAAI | 2023 - |
| UIST | 2023 - |

ACL / EMNLP

2023 -

UAI

2018