Jeevana Priya Inala

(617) 396 0668
jinala@microsoft.com
jinala.github.io

Research focus

Artificial Intelligence and Program Synthesis. Developing *neurosymbolic* approaches for learning *program* models that are interpretable and generalizable, and applying them to several applications in *robotics*.

Experience

Oct 2021 - present **Senior Researcher**, Microsoft Research, Redmond, WA.

Summer 2017 **Research Intern**, Toyota Research Institute, Cambridge, MA.

Worked on modeling human driving behavior using traffic data so that the models can then be used to synthesize/verify safe autonomous controllers.

Summer 2016 **Research Intern**, Microsoft Research, Redmond, WA.

Developed a programming-by-example system to integrate the relational data from spreadsheets with the semi-structured web-data.

Summer 2014 **Software Engineering Intern**, Google Inc., Mountain View, CA.

Designed and implemented an android app for Content ID feature in YouTube.

Education

2016-2021 **Ph.D.**, *Computer Science*, Massachusetts Institute of Technology (Expected).
Advisor: Prof. Armando Solar-Lezama
Thesis: Neurosybmolic Learning for Robust and Reliable Intelligent Systems.

2015–2016 **Master of Engineering**, *Computer Science*, Massachusetts Institute of Technology.
GPA: 5/5
Advisor: Prof. Armando Solar-Lezama
Thesis: Synthesis of Domain Specific CNF Encoders for Bit-Vector Solvers

2012–2016 **Bachelor of Science**, *Electrical Engineering and Computer Science*, Massachusetts Institute of Technology.
GPA: 4.9/5

Publications

Under submission Jeevana Priya Inala, Jason Ma, Osbert Bastani, Xin Zhang, Armando Solar-Lezama.
Safe Human-Interactive Control Modulo Fault.

NeurIPS 2021 **Spotlight** Yichen Yang, Jeevana Priya Inala, Osbert Bastani, Yewen Pu, Armando Solar-Lezama, Martin Rinard.
Program Synthesis Guided Reinforcement Learning.

ICCV 2021 Jason Yecheng Ma, Jeevana Priya Inala, Dinesh Jayaraman, Osbert Bastani.
Likelihood-Based Diverse Sampling for Trajectory Forecasting.

NeurIPS 2020 Jeevana Priya Inala*, Yichen Yang*, James Paulos, Yewen Pu, Osbert Bastani, Vijay Kumar, Martin Rinard, Armando Solar-Lezama.
Neurosymbolic Transformers for Multi-Agent Communication.

ICLR 2020 Jeevana Priya Inala, Osbert Bastani, Zenna Tavares, Armando Solar-Lezama.
Synthesizing Programmatic Policies that Inductively Generalize.

ICRA 2019 Thais Campos*, Jeevana Priya Inala*, Armando Solar-Lezama, Hadas Krez-Gazit. *(* equal contribution)*
Task-based Design of Modular Ad-hoc Manipulators.

SIGGRAPH ASIA 2018 Tao Du, Jeevana Priya Inala, Yewen Pu, Andrew Spielberg, Adriana Schulz, Daniela Rus, Armando Solar-Lezama, Wojciech Matusik.
InverseCAD: Automatic Conversion of 3D Models to CSG Trees.

POPL 2018 Jeevana Priya Inala, Rishabh Singh.
WebRelate: Joining Web Data with Relational Data using Examples.

TACAS 2017 Jeevana Priya Inala, Nadia Polikarpova, Xiaokang Qiu, Ben Lerner, Armando Solar-Lezama.
Synthesis of Recursive ADT Transformations from Reusable Templates.

EuroSys 2016 Nathaniel Herman, Jeevana Priya Inala, Yihe Huang, Lily Tsai, Eddie Kohler, Barbara Liskov, Liuba Shrira.
Type-Aware Transactions for Faster Concurrent Code.

SAT 2016 Jeevana Priya Inala, Rohit Singh, Armando Solar-Lezama.
Synthesis of Domain Specific CNF Encoders for Bit-Vector Solvers.

Awards

2016 - 17 Microsoft Research Women's Fellowship

2016 Charles and Jennifer Johnson MEng Thesis First Place Award

2016 First place in ACM student research competition grand finals

2015 First place in PLDI student research competition

2014 - 15 Actifio Undergraduate Research and Innovation Scholar

2012 Gold medal at 13th Asian Physics Olympiad, India

2011 Gold medal and Best in Theory in 5th International Olympiad in Astronomy and Astrophysics, Poland

2012 Silver medal and Asian Girl topper in 43rd International Physics Olympiad, Estonia

2012 Secured rank 21 in the Indian Institute of Technology (IIT) Joint Entrance Examination

Skills

Machine Learning Reinforcement Learning; Multi-Agent RL; Transformers; Generative Adversarial Network (GAN); Variational Autoencoder (VAE);

Program Synthesis Sketch synthesizer; SMT solvers like Z3, CVC4; Version Space Algebra;

Languages Python, PyTorch, Java, C++

Talks/Posters

Dec 2020 **NeurIPS conference.** Neurosymbolic Transformers for Multi-Agent Communication.

April 2020 **ICLR conference.** Synthesizing Programmatic Policies that Inductively Generalize.

Feb 2020 **AAAI GenPlan workshop.** Synthesizing Programmatic Policies that Inductively Generalize.

Jan 2018 **POPL conference.** WebRelate: Joining Web Data with Relational Data using Examples.

Apr 2017 **TACAS conference.** Synthesis of Recursive ADT Transformations from Reusable Templates.

Aug 2016 **Microsoft Research.** WebRelate: Joining Web Data with Relational Data using Examples.

Jul 2016 **SAT conference.** Synthesis of Domain Specific CNF Encoders for Bit-Vector Solvers.

Jul 2016 **SMT workshop.** Synthesis of Domain Specific CNF Encoders for Bit-Vector Solvers.

Jun 2016 **ExCAPE PI meeting.** Synthesis of Domain Specific CNF Encoders for Bit-Vector Solvers.

Jun 2015 **PLDI student research competition.** Synthesis of Recursive ADT Transformations from Reusable Templates.

Reviewing

Reviewer for PLDI 2022, ICLR 2022, NeurIPS 2021.
Reviewer for artifact evaluation for CAV 2020 and POPL 2019.
Reviewer for journal papers in Robotica.