

Aaditya Naik

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EDUCATION

University of Pennsylvania

Ph. D., Computer and Information Science

Sept. 2020 – Present

Mukesh Patel School of Technology Management and Engineering (MPSTME)

B. Tech., Computer Engineering

July 2016 – May 2020

PUBLICATIONS

GenSynth: Synthesizing Datalog Programs without Language Bias.

Jonathan Mendelson, Aaditya Naik, Mukund Ragothaman, Mayur Naik

accepted and to appear in AAAI '21

Code2Inv: A Deep Learning Framework for Program Verification.

Xujie Si, Aaditya Naik, Hanjun Dai, Mayur Naik, Le Song

in CAV '20

WORK EXPERIENCE

University of Pennsylvania

Research Intern

Jan 2019 – May 2020

- Worked on a project *Code2Inv* to make it compatible with various input representations including C programs and CHC constraints.
- Drew a comprehensive study on the state-of-the-art software checkers.
- Implemented an SSA transformation for *Code2Inv* benchmarks using the *Clang C++ API*.

getparking.in

Summer Intern

May 2018 – July 2018

- Used transfer learning to build a deep learning model based on the InceptionV3 architecture to identify the make and model of a car given its image.
 - Thoroughly reviewed existing state-of-the-art image classification models.
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TEACHING EXPERIENCE

University of Pennsylvania

Teaching Assistant

May 2020 – Present

- TA for *MCIT CIS 547: Software Analysis* for Summer and Fall 2020 which covers concepts including static and dynamic analyses, symbolic executors and automated debugging.

ACM Student Chapter, MPSTME

Instructor

Sept. 2019

- Taught core C concepts to college freshman students over a 4 day workshop.

PROJECTS

GenSynth

gensynth.cis.upenn.edu

A genetic algorithm which synthesizes Datalog queries given a set of input and output data without requiring language biases.

Code2Inv

code2inv.org

A general end-to-end deep reinforcement learning framework which learns a valid loop invariant for any given verification task in a manner similar to how a human expert would learn the invariant.

SKILLS

Programming Languages : Python, C/C++, Bash, Java, MATLAB, Coq

Tools : Git, L^AT_EX, Docker

Miscellaneous : LLVM/Clang APIs, PyTorch, Z3

REFERENCES

Mayur Naik (PhD Advisor)

Professor and Graduate Chair

Computer and Information Science

University of Pennsylvania

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Mukund Ragothaman

Assistant Professor

Department of Computer Science

University of Southern California

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