

# Ben Mariano

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## Education

**University of Texas at Austin**, Austin, Texas 2019- Present

- PhD, Department of Computer Science with advisor Isil Dillig

**University of Maryland**, College Park, Maryland 2013-2019

- B.S., Department of Electrical and Computer Engineering, GPA: 3.76
  - M.S., Department of Computer Science with advisor Jeff Foster, GPA: 4.0
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## Research

**University of Texas at Austin**, Austin, Texas 2019 – Present

*Research Assistant for Dr. Isil Dillig (UToPiA Lab)*

- Using neural program synthesis to solve source-to-source translation problems
- Created program synthesizer for summarizing loops in smart contracts
- Designed DSL for specifying liveness properties of smart contracts

**Max Planck Institute**, Kaiserslautern, Germany Summer 2019

*Intern for Dr. Maria Christakis*

- Designed optimization methodology for abstract interpreter parameters
- Performed empirical study on real-world programs to measure precision/performance tradeoffs

**University of Maryland**, College Park, Maryland 2017 – 2019

*Research Assistant for Dr. Jeff Foster (PLUM Lab)*

- Developed and tested new models of the Java Standard Library for synthesis optimization
  - Experimented with new axiomatic programming paradigms for program synthesis
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## Work Experience

**University of Texas at Austin**, Austin, Texas Fall 2019

*Teaching Assistant for Discrete Math with Dr. Isil Dillig*

- Graded homework, taught weekly discussion, and helped design examination problems

**University of Maryland**, College Park, Maryland Spring 2019

*Co-teacher for Functional Pearls (<http://www.cs.umd.edu/class/spring2019/cmsc388F/>) with Cameron Moy*

- Created and taught seven lectures on advanced functional programming topics

**University of Maryland**, College Park, Maryland Fall 2017

*Teaching Assistant for Advanced Functional Programming with Dr. Niki Vazou*

- Helped design and grade Haskell homeworks, designed lecture material, and held office hours

**Prime Solutions**, Columbia, Maryland Summer 2015, Summer 2016

*Software Engineering Intern*

- Designed, developed, and tested simulation of malicious protocols in C and Python (2016)
- Automated analysis of local Wi-Fi traffic to determine device-specific information (2015)

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## Publications

### **Demystifying Loops in Smart Contracts** (ASE 2020)

**Ben Mariano**, Yanju Chen, Yu Feng, Shuvendu K. Lahiri, Isil Dillig

### **Program Synthesis Using Algebraic Library Specifications** (OOPSLA 2019)

**Ben Mariano**, Josh Reese, Siyuan Xu, ThanhVu Nguyen, Xiaokang Qiu, Jeffrey S. Foster, Armando Solar-Lezama

### **Automatically Tailoring Static Analysis to Custom Usage Scenarios** (in review)

Numair Mansur, **Ben Mariano**, Maria Christakis, Jorge Navas, Valentin Wustholz

### **SmartPulse: Automated Checking of Temporal Properties in Smart Contracts** (in review)

Jon Stevens, Kostas Ferlas, **Ben Mariano**, Shuvendu K. Lahiri, Isil Dillig