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Tzu-Han Hsu

Research Interests

My research interests include applications of **formal methods** in program **verification**, **synthesis for hyperproperties**, and analysis of **information-flow security.**

Education

Ph.D. Student in Computer Science Engineering   2020–present
Michigan State University, East Lansing, MI, USA
   Advisor: Dr. Borzoo Bonakdarpour

Bachelor of Science in Computer Science   2016–2020
Iowa State University, Ames, IA, USA

Bachelor of Music in Piano Performance   2013–2017
Iowa State University, Ames, IA, USA

Research Experience

- **Graduate Research Assistant** *Michigan State University*   2020–Present
  Formal Methods, Synthesis of Hyperproperties, Information-flow Security, and Privacy
- **Undergrad Research Assistant** *Iowa State University*   2019–2020
  Model checking and Hyperproperties

Conference Papers

1. <u>Tzu-Han Hsu</u>, César Sánchez, and Borzoo Bonakdarpour, **"Bounded Model Checking for Hyperproperties"** *In International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS'21), Luxembourg, Luxembourg.*

2. <u>Tzu-Han Hsu</u>, Borzoo Bonakdarpour, Eunsuk Kang, and Stavros Tripakis, **"Mapping Synthesis for Hyperproperties"** *In IEEE International Symposium on Computer Security Foundations (CSF). To appear.*

Preprints

1. <u>Tzu-Han Hsu</u>, Yu Wang, Borzoo Bonakdarpour, Miroslav Pajic, **"Multi-Agent Path Planning with Hyperproperties"** (2020)

Teaching Experience

- **Graduate Teaching Assistant** at Michigan State University   Spring 2020
  Discrete Structures in Computer Science (CSE 260)
- **Undergrad Teaching Assistant** at Iowa State University   Spring 2018, Fall 2018
  Object-Oriented Programming (COM S 227)

Professional Service

- **Student Volunteer**. *International Conference on Computer Aided Verification (CAV)*, 2021.
- **Subreviewer**. *International Symposium on Automated Technology for Verification and Analysis (ATVA)*, 2021.

Fellowships

- University Graduate Research Fellowship, *Michigan State University*, April 2020.

Honors, Awards, and Scholarships

Nomination of Departmental Outstanding Senior of 2020	2020
Iowa State University College of Liberal Arts and Sciences Dean's List	2013–2020
Future Leader Award, Issued by U.S. Ambassador to China Terry Branstad	2018
Iowa State University International Student Ambassador Gold Level Scholarship Recipient	2013–2018
Iowa State University Music Department Outstanding Student Scholarship Recipient	2013–2018

Leadership and Volunteer Experiences

The Society for Collegiate Leadership & Achievement	2016–2020
Iowa State University Student Council, Department Representative	2017–2018
Iowa Education without Borders (non-profit) Volunteer/Event Coordinator	2017–2018
Iowa Youth Leadership Summer Camp Student Volunteer	2017–2018
Iowa State University Annual K-12 Computational Thinking Competition	2020

Music Awards

Soloist Winner, Fort Dodge Orchestra Young Artists Concerto Competition	2015
1st Prize Winner, Iowa State University Symphony Orchestra Concerto Competition	2014
State Winner, Music Teacher National Association (MTNA) Piano Competition	2014

Industrial Experience

Software Engineer Intern 2019–2020
Worrell Medical Design Inc., Minneapolis, MN