

Aspiring PI Info:

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- Professor
- University of Texas at Austin



Research interests:

- Specification-based testing, analysis, error recovery, and synthesis
- Modeling languages
- Symbolic execution and model checking
- Constraint solving and model counting
- Explainable AI
- Chemical reaction networks (CRNs)

Current Project(s)

- Generation of executable predicates from expected properties [Jiang-arXiv'24]
- Symmetry breaking for (approx.) model counting [Wang-PhD'24]
- Model counting meets machine learning [Usman-PhD'22]
- Synthesis of correct ML models [Singh-PhD'22]
- CRNs ↔ neural nets [Vasic-PhD'22]

Project Idea(s)...

- How to more easily write (correct) specs?
 - “Copilot” for specs
 - Spec validation
- How to scale systematic techniques to modern systems?
 - Human/machine co-authorship
 - Correct by construction components
- How to make formal methods less “formal”?
 - “Natural” specs, code, and formal methods

... and possible collaborators sought

- Formal Methods
- Applications
- Education
- *How to develop scalable methods that are more natural to use and make a deeper impact?*

