

Aspiring PI Info:

- Name: Swarn Priya
- Position/Title: Postdoctoral Research Associate
- Affiliation: Virginia Tech

**Research interests:**

- Formal methods (theorem prover) and its application in security.
- Programming languages
- Building formally verified compilers

Current Project(s):

- Building a formally verified end-to-end framework to implement safe and correct eBPF programs.
 - Strong type system (formally verified for its soundness)
 - Formally verified compiler from eBPF to BPF bytecode that preserves the property guaranteed at the source-level

Project Idea(s)...

- Linux community, especially eBPF users
- The goal is to provide a safer kernel extension mechanism
- Encourage students to understand theory behind programming languages, type system and teach them how to build a formally verified compiler through the project

... and possible collaborators sought

- Applications of formal methods
- Interest in building a formally verified compiler
- Interested in improving eBPF toolchain for better safety guarantees

