

Aspiring PI Info:

- Sankha Narayan Guria
- Assistant Professor
- University of Kansas

Research interests:

- Program synthesis
- Type systems
- Abstract Interpretation
- Lightweight Formal Methods

Current Project(s):**Program synthesis in context of large systems**

- Gradually typed languages?
- Lightweight specifications: types and tests
- LLMs can generate barebones templates

Reliable web applications on the cloud

- Secure and idempotent REST APIs
- Database, queues, serverless
- Difficult to verify

Project Idea(s)...**Reliable web applications on the cloud**

- Programmer efficiency: automate boilerplate code and formal safety guarantees
- Integrate into software engineering course
- Tool development with industry partners

Trustworthy computational fluid dynamics

- Quick iteration cycles simulations ↔ experiments
- Better optimizations from new invariants
- Course for engineers with correctness focus
- Reusable software packages for community use

... and possible collaborators sought

- Looking to collaborate with complementary skills people in formal methods (= verification)
- ... and the field (= {distributed?} systems, scientific computing, AI)

