

Steve Ko

I am looking for highly-motivated students interested in joining one of my research projects. If you'd like to know more about me, you can check out my website at:

<https://steveyko.github.io>

The projects are as follows.

* Automated vulnerability discovery and repair

Our goal is to have a fully-automated tool that can analyze a large-scale code base, e.g., the Linux kernel, to discover security vulnerabilities and repair them. We can potentially use LLMs combined with traditional static/dynamic program analysis tools. This is at the intersection of computer security, software engineering, and AI (Large Language Models).

* Accelerating SLAM system with GPUs

SLAM systems demand very high compute and memory capacities, and are considered challenging to run. Our goal is to develop techniques to accelerate SLAM systems with the help of GPUs. This is at the intersection of robotics, and parallel systems.

* Implementing and formally verifying security properties for Bluetooth

Our goal is to implement a full Bluetooth stack that is provably free of certain classes of security problems. We aim to provide a safer and more secure alternative to the Android's Bluetooth stack. This is at the intersection of computer security and formal verification