gem5 bootcamp: Latin America 2024

Some things to get you started before the bootcamp

Pre-bootcamp Reading

If you want to get familiar with gem5

These papers are good to skim. You do not need to read carefully.

- The original gem5 paper: The gem5 simulator
- The gem5-20 paper: The gem5 Simulator: Version 20.0+

The "original" paper was published in 2011 just after m5 and GEMS combined to form gem5 and is a good overview of the simulator architecture and models included at that time.

The new gem5-20 paper discusses the changes since the 2011 paper and provides an overview of the current models in gem5.

Pre-bootcamp Reading on Secure Memory

In the bootcamp, we will be building a secure memory component. The following papers are a good introduction to secure memory:

- AEGIS: A single-chip secure processor
- Efficient Memory Integrity Verification and Encryption for Secure Processor
- Caches and Hash Trees for Efficient Memory Integrity Verification
- Using Address Independent Seed Encryption and Bonsai Merkle Trees to Make Secure Processors OS- and Performance-Friendly
- PoisonIvy: Safe Speculation for Secure Memory

Pre-bootcamp prep

The prerequisites for the bootcamp:

- Undergraduate computer architecture
  - Memory architecture
  - Caches
  - In-order and out-of-order processor design
  - Multicore architecture and cache coherence
- C++
- Python
  - The next slidedeck covers a python reminder