Sangjae Park

Address: 120, Jeongjail-ro , Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea

Email: sangjae4309@gmail.com | Website: sangjae4309.github.io

Summary

SoC RTL Engineer at Anapass Inc, Seoul Korea, specialized in OLED TCON/TED ASIC. Skilled in front-end design and backed by a academic record in DRAM micro-architecture. Dedicated to robust and efficient hardware through innovative solutions.
Research Interest: Computer Architecture, VLSI, Hardware Chip Design, 3D integration, Chiplet, Heterogeneous Systems, Memory-Centric Computing

Education

- **Sungkyunkwan University** *Jan 2021 - Jan 2023*
  M.S. in Electrical and Computer Engineering Suwon, Korea
  - Thesis: On-Die Dynamic Remapping Cache: Strong and Independent Protection Against Intermittent Faults (Advisor: Prof. Jungrae Kim)
  - GPA: 4.44/4.5(≒4.0/4.0)
- **Sungkyunkwan University** *March 2017 - Jan 2021*
  B.S in Electrical and Electronic Engineering Suwon, Korea
  - GPA: 3.75/4.5(≒3.53/4.0), Major: 4.03/4.5(≒3.73/4.0)

Experience

- **Anapass Inc** *Jan 2023 - Current*
  SoC RTL Enginner @R&D Center Seoul, Korea
  - Served in this position as an alternative to the **mandatory military duty** required of all Korean males.
  - Products: OLED TCON/TED, developed in collaboration with Samsung Display and adopted in major consumer devices such as Steam Deck, Galaxy-A series.
  - My primary responsibilities centered on DFT, DSC codec, and Gate Pulse I/O, with a working understanding of both eDP and MIPI interfaces.
  - Played a key role resolving yield loss issues via post-silicon debugging, working closely with manufacturing teams.

Projects

- **Anapass: Design Custom ASIC for Display Driver Controller** *Jan 2023 - Current*
  Skill: SystemVerilog, Xcelium, MemoryBIST, SpyGlass, Design Compiler
  - Develop display controller IC regarding Notebook, Tablet, and automotive.
  - As RTL Engineer, integrate multiple IPs and design RTL blocks.
- **SKKU: Development of intelligent in-memory error correction devices for high reliability memory** *Apr 2021 - Jan 2023*
  Skill: C++, SystemVerilog [github]
  - Developed smart error correction algorithms tailored for eDRAM-based in-memory computing.
  - Actively collaborated with the FPGA-team to explore commercial DRAM vulnerabilities, as well as supporting the RTL team for rigorous verification
  - Funded by Institute for ICT Planning & evaluation (IITP, 2021-0-00863)

Patents and Publications

[Journal] Yuseok Song, **Sangjae Park**, Michael B. Sullivan and Jungrae Kim. **SEC-BADAEC: An Efficient ECC With No Vacancy for Strong Memory Protection**. In *IEEE Access, Vol.10, 2022.* [Paper] [NVIDIA Research]

[Journal] **Sangjae Park** and Jungrae Kim. **On-Die Dynamic Remapping Cache: Strong and Independent Protection Against Intermittent Faults**. In *IEEE Access, Vol.10, 2022.* [Paper]

[Patent] Jungrae Kim and **Sangjae Park**. **Apparatus and method for remapping of memory**. Patent No.KR1020210096297A. [Patent]

Open-Source Contribution

- **gem5-Ramulator2** *Dec 2023*
  language: C++, Python [github]
  - Provides an environment for integrating gem5 with Ramulator2.
  - While integrating the two simulators, I discovered and addressed several bugs and improvements, contributing to both the gem5 and Ramulator2 official repositories.
- **Parallel-Task-Harbor** *Feb 2025*
  language: Python [github]
  - Python-based parallel task automation script designed to simplify the simulation of hundreds or thousands of different tasks simultaneously.

Skills

- **Languages:** C++ (up to C++11), Python, SystemVerilog
- **Tool:** Xcelium, MemoryBIST, Design Compiler, SpyGlass
- **Framework/Simulator:** Pytorch, gem5, Ramulator

Honors and Awards

- **Graduate Merit Scholarship (A half-tuition for 2-year)** *2021 - 2022*
  Sungkyunkwan University
- **Dean's LIST** *Nov 2020*
  Sungkyunkwan University
- **Student Success Scholarship (Full-tuition for 1-year)** *March 2020*
  Sungkyunkwan University