Sanghyun Park

Undergraduate Researcher

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Education

Seoul National University

Gwanak-gu, Seoul, Korea

Currently attending — *May. 2015 - PRESENT*

- **Statistics and Mathematics**, Major — *GPA: 4/4.3*
- **Computer Science**, Double major — *GPA: 4.12/4.3*

Awards and Scholarships

Kwanjeong Educational Foundation Full Scholarship — *2017 - PRESENT*

Dean's List (Dept. of Statistics) — *2016*

Shinhan Card CEO Prize — *2016*

Main interests

Statistical computation Arbitrary precision arithmetic, Fast matrix operation, Low-level optimization

Static program analysis Hindley-Milner let polymorphism, Subtype system, Term rewriting system

Experience

Korea Institute of Science and Technology

Seongbuk-gu, Seoul, Korea

Research Intern — *Dec. 2019 - PRESENT*

- Building generalized linear mixed model and fitting autoencoder model predicting ASSR responses.

Shinhan Card

Jung-gu, Seoul, Korea

Analyst Intern — *Dec. 2015 - May. 2016*

- Implemented R-based comment crawling functionality with Facebook API.
- Built Seoul tourism recommendation system for foreigners (with SK telecom and LG CNS).
- Prized by the firm CEO.

Phronesis

Gwanak-gu, Seoul, Korea

Highschool Student Mentor — *June. 2015 - Aug. 2019*

- Wrote stock market simulation program for student-involved economic class.

Projects

Measure theoretic probability theory (currently working)

- Lecture material for freshman and sophomore students of dept. of statistics and mathematics in SNU.
- Covers point estimation and hypothesis testing theory from the perspective of measure theory.
- Key parts include measurability issue of M-estimator and approximation of LR test procedures based on LAN property due to Le Cam.

Tiny Calculator (currently working)

- Simple but high-performance numeric analysis program written in C++ with sophisticated syntax and type system.
- Equipped with powerful type checker which detects all type errors before execution by unifying type equations.
- Also equipped with custom memory management module and optimized non-recursive parsing algorithm. (10 million expressions/sec)

My Alloc (2019)

- Memory allocation module written in C with segmented list approach.
- Marked 96/100 performance index.
- Robust to external fragmentation by 'learning' memory request trend over time.

8bit Microprocessor (2017)

- Microprocessor with 4 instructions (Add, Load, Store, Jump) and 4 registers.
- All components, registers, ALU, control unit, memory, etc are built from gate level.
- Operates with 1Hz clock signal.