

Rohith Rokkam

B.S. Computer Science (Honors) and Mathematics, Summa Cum Laude
Stony Brook University, Spring 2019

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experience

- Research and Development Intern – Sandia National Labs** 06/18 - Present
- Contributed to parallelization facilities for an MPI-based C++ solver framework.
 - Wrote dynamic MPI code with scalability for supercomputers in mind.
 - Maintained legacy compatibility as major updates were made to the software.
- Teaching Assistant – Theory of Computation** Spring 2018/19
- Designed & graded regular homework assignments for a class of 25 students.
 - Gave substitute lectures on several occasions when the professor was unavailable.
 - Wrote exam questions on automata, formal languages, Turing machines, and complexity theory.
- Teaching Assistant – Foundations of Computer Science** Spring 2017
- Instructed 20-person recitation section on discrete math, logic, and proof techniques.

selected projects

- Canvassing Application** Fall 2018
- Collaborated to build a JavaScript web app for managing door-to-door campaigns.
 - Built a microservice in Python using MongoDB and Google OR-Tools to schedule canvasser routes.
- Peer-to-peer Filesystem** Spring 2018
- Wrote an Airdrop-like P2P service for Linux and MacOS using Python's FUSE bindings.
 - Designed a custom protocol and made a multithreaded bootstrap server to host the network.
- Packet Sniffer** Spring 2018
- Created a packet sniffer capable of output to using Python's raw sockets.
 - Added settings for writing to human-readable, hex, and pcapng (Wireshark-readable) formats.
- Dynamic Memory Allocator** Spring 2018
- Developed a malloc library in C, using a custom heap debugger and simulator.
 - Coded a segmented free-list for the allocator to use with the first-fit strategy.
 - Implemented optimizations from glibc malloc, such as use of a wilderness block.
- Caching Service** Fall 2017
- Wrote an in-memory least-recently-used caching service in C similar to Memcached.
 - Created custom multithreading-safe queue and hashmap data structures to hold cached data.
- Bash-like Shell** Fall 2017
- Made a shell in C capable of output redirection, piping, and background jobs.
 - Carefully eliminated race conditions generated by asynchronous UNIX signals.
- Navigation System** Fall 2016
- Developed a Google Maps-like app in Java using the OpenStreetMap API and an XML parser.
 - Implemented shortest-path finding using Dijkstra's algorithm.

organizations

- SBU Algorithms Lab** 01/19 - Present
- Discussed methods in theoretical computer science with undergrads and Ph.D. students.
 - Presented on topics in algorithms, discrete math, data structure design, and probability.
 - Current research focuses on online dense square-packing.
- SBU Go Club – Secretary** Fall 2017 - Spr. 2019
- Organize annual 10-15 person trips to New York City and Washington DC Go tournaments.
 - Host annual American Go Association-rated tournament at Stony Brook with 40+ entrants.
 - Hold meetings twice a week and teach new players the rules and basic strategy.
- SBU Undergrad Algorithms Reading Group** Fall 2017 - Spr. 2018
- Present algorithms, data structures, and logic puzzles of interest.