Chris Yoon

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EDUCATION

Columbia University, Columbia College — New York, NY
B.A. Computer Science, Concentration in Mathematics (GPA: 3.92) — Sep 2020 – May 2024
Select Coursework: Graduate Operating Systems, Graduate Compilers and Programming Language Theory
Teaching Assistantships: Compilers (Head TA), Parallel Functional Programming, Artificial Intelligence

INDUSTRY

Palantir Technologies — New York, NY
Software Engineer Intern, *Gotham Data Modeling Team* — Sep 2023 – Dec 2023
- Backend engineering for Palantir Gotham (U.S. Gov) and Foundry (commercial sector) data ontology services
- Built API services for interoperability and distributed synchronization of Gotham and Foundry data entities
- Related technologies: Java, API Engineering, Distributed Systems

Virtu Financial — New York, NY
Software Engineer Intern, *HFT Pre/Post-Trade Development Team* — May 2023 – Aug 2023
- Implemented mTLS for async TCP sockets with low-level Java interfaces for core trading infrastructure
- Migrated stunnel-based TLS support in real-time trade ingestion system to use custom mTLS implementation
- Implemented proprietary authentication & authorization mechanism into company's post-trade data services
- Related technologies: Java standard libraries (concurrency, NIO, security, networking), Java Spring

Riot Games — New York, NY
Software Engineer Intern, *Live Operations Engineering Team* — May 2023 – Aug 2023
- Built a GitOps-based config management service for Riot's service alert ingestion systems
- Built a CI/CD pipeline to deploy configs to monitoring systems and execute rollbacks at crash
- Related Technologies: Python, Docker, Jenkins

RESEARCH

Compilers & Programming Languages with Prof. Stephen Edwards — Sep 2022 – Present
- Building *sslang*, a language implementing the Sparse Synchronous Model for deterministic concurrency
- Implemented a session-typed lambda calculus interpreter to explore statically verified concurrent programs
- Related Technologies: Hindley-Milner Type System, Session Types, Haskell, OCaml

Secure Containerization on ARMv9 Linux Realms with Prof. Jason Nieh — Sep 2022 - May 2023
- Contributed to ARMv9 Realm container monitor that protects container memory against untrusted host OS
- Wrote kernel interfaces to a hypervisor-like container monitor for lifetime and memory management
- Related Technologies: Linux Kernel Engineering, ARMv9 Linux, Assembly, Micro-OS, Hypervisors (KVM)

SKILLS

Areas: Backend Development, Distributed Systems, ML Systems, Linux Kernel Engineering, Compilers
Programming Languages: C, C++, Java, Python, OCaml, Haskell, Rust, RISC-V Assembly
Technologies: LLVM, MLIR, Hypervisors, Containerization, PyTorch, Tensorflow, SQL

SOFTWARE

Encrypted-TAO, built with Rust and Postgres — **[GitHub]**
- Implemented Facebook's social graph serving model (TAO), but capable of operating on fully encrypted data
- Implemented graph-to-SQL query translation, and order-preserving/homomorphic encryption schemes

Orlang, built with OCaml and LLVM — **[GitHub]**
- Built *Orlang*, a functional programming language with a Hindley-Milner type system and first class functions

RLCycle, built with Python, PyTorch, Ray, ZeroMQ — **[GitHub]**
- Implemented deep reinforcement learning algorithms and distributed training; got over 280 Github stars