

Esteban I. Ramos

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Education

University of California, Santa Cruz

Ph.D. Student, Computer Science, 2021 - Present

Emory University

B.S. in Computer Science Minor in Applied Mathematics, 2019

Experience

Graduate Student Researcher, Fall 2021 - Present

Language, Systems, and Data Lab at UCSC

- Developed open source synchronization benchmark for multi-host distributed shared memory environment
- Researched techniques to reduce end-to-end request latency in Microservices applications by leveraging SmartNICs and novel interconnect Compute Express Link (CXL)
- Implemented end to end integrated mechanized verification pipeline for OS development in Rust

Nera Systems, Remote, California, USA, Summer 2024

- Developed compiler for transforming standard Python source code into functionally equivalent source code compliant with Fully Homomorphic Encryption(FHE) and capable of executed over private encrypted data
- Established compilation and execution pipeline for code transformations and optimizations for TFHE encryption scheme data with configurable software and FPGA based backends

Intel Corporation, Santa Clara, California, USA, Summer 2022

Graduate Software Engineering Intern

- Developed prototype that offloaded Remote Procedure Call (RPC) processing to Intel's Infrastructure Processing Unit (IPU)
- Reduced latency through low level profiling and testing to reach zero-copy request/reply flow in gRPC offload prototype
- Final workshop publication at APSys2024

NCR Corporation, Atlanta, Georgia, USA, Spring 2020- Fall 2021

Software Engineer

- Engineered cloud scale applications as a full-time Software Engineer on an experienced team using Agile methodology, focused on Microservices architectures deployed on Kubernetes with distributed batch processing frameworks (Apache Beam, Google Dataflow, Apache Spark)
- Designed and developed of automatic schema-flexible ETA ingestion platform for batch and stream processing of customer records

Undergraduate Student Researcher Fall 2019

SimBioSys Lab at Emory University

- Researched synthesizing distributed traces of HPC motifs/patterns to benchmark systems on a system upscaling simulator

Verint Systems, Atlanta, Georgia, USA, Summer 2019

Software Engineering Intern

- Developed a RESTful API in Java that facilitated querying of internal status information of a complex integration component in a largely self led project that was pushed into production after completion

Publications and Awards

NotNets: Accelerating Microservices by Bypassing the Network

In Proceedings of the 15th ACM SIGOPS Asia-Pacific Workshop on Systems (APSys '24)

Association for Computing Machinery, New York, NY, USA, 67–73. <https://doi.org/10.1145/3678015.3680494>

Split gRPC: An Isolation Architecture for RPC Software Stacks

In Proceedings of the 15th ACM SIGOPS Asia-Pacific Workshop on Systems (APSys '24)

Association for Computing Machinery, New York, NY, USA, 81–87. <https://doi.org/10.1145/3678015.3680484>

MCM/ICM: The Interdisciplinary Contest in Modeling(COMAP), Spring 2019

Outstanding Winner

- Competed with Emily Rexer and Ishan Saran in the MCM/ICM 2019 and chosen as one of the 19 Outstanding Winners out of 11,000 participating teams and for publication
- Paper published in the Fall 2019 Edition of the UMAP Journal, as A Monetary Evaluation of Ecosystem Services

Programming Skills

Languages: Proficient in C, C++, Go, SQL, Java; Experience with Rust, Python, JavaScript, MATLAB, x86 Assembly

Frameworks/Tools: Proficient in UNIX, linux-perf, Kubernetes; Experience with Lockfree programming, Kani (Rust-based mechanized verification tool), Valgrind, SpringFramework, Apache Beam, Gradle, Maven, Google Cloud Platform

Relevant Coursework Distributed Systems, Compilers, Networks, Design of Database Systems, Systems Programming, Mathematical Modeling, Computer Security, Assembly Programming, Algorithms, Cryptography, Numerical Analysis