

Souvik Banerjee

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Experience

Tudor Investment Corporation

Oakland, CA

Quantitative Developer: Macro Pipeline

Nov 2024 - Present

- Quantitative research and development supporting low-latency trading strategies and systems.
- Architected and deployed a distributed system to transmit predictive signals across exchanges, credited with unlocking \$10M+ in annual P&L through cross-venue strategy execution.
- Engineered a custom market data ingestion pipeline, streaming compressed packet capture files directly from AWS S3 and eliminating intermediate decompression; reduced annual cloud processing and storage costs by approximately \$250,000.

Apple

Cupertino, CA

Senior Software Engineer: Core OS Kernel Technologies

Sep 2019 - Nov 2024

- Directed engineering effort to integrate ARMv9 Memory Tagging Extensions (MTE) into iOS kernel and firmware.
- Led a team in building core memory, application execution, and device driver subsystems for a next-generation secure OS, architected to leverage advanced hardware security features.
- Architected and delivered new features for third party device drivers on iPad, adding support for custom USB and Thunderbolt devices. Presented at [WWDC 2022](#).
- Designed and implemented core security and stability enhancements for Apple operating systems.

Software Engineer Intern: Core Kernel

May 2018 - Aug 2018

- Designed a concurrency bug detection feature using randomized scheduling to identify race conditions in kernel subsystems.

University of Texas at Austin

Austin, TX

Undergraduate Researcher

Aug 2017 - Aug 2019

- Analyzed performance and I/O behavior of Linux filesystems. Presented findings at the UT Undergraduate Research Forum.
- Prototyped new blockchain architectures with a focus on network and storage performance.
- Publications:
 - Ponnappalli, Soujanya, Aashaka Shah, **Souvik Banerjee**, Dahlia Malkhi, Amy Tai, Vijay Chidambaram, and Michael Wei. "RainBlock: Faster Transaction Processing in Public Blockchains." In 2021 USENIX Annual Technical Conference (USENIX ATC 21).

Teaching Assistant

Aug 2016 - Dec 2017

- Taught CS 439H Operating Systems Honors, CS 429H Computer Architecture Honors, CS 311 Discrete Mathematics.

Point72: Cubist Systematic Strategies

New York, NY

Research Analyst Intern: FX Options Trading

Dec 2018

- Improved performance of automated trading systems by requesting quotes in parallel using the FIX protocol.

Citadel Securities

Chicago, IL

Software Engineer Intern: Low Latency

Sep 2018 - Nov 2018

- Enabled performance analysis of automated trading systems by creating tools to analyze compiler optimizations.

Facebook

Menlo Park, CA

Software Engineer Intern: WhatsApp iPhone

May 2017 - Aug 2017

- Added new features: Switch seamlessly between voice and video calls, notify contacts when changing phone number.

Software Engineer Intern: WhatsApp VoIP

May 2016 - Aug 2016

- Improved reliability and deployment speed for WhatsApp's VoIP relay server, reducing upgrade times by 99%.

Education

University of Texas at Austin

May 2019

B.S. Computer Science Honors, Mathematics

GPA: 3.989

- **Turing Scholar, Distinguished College Scholar, University Honors**
- Honors Thesis: Implementing Stateless Clients in Ethereum