

# João Pedro Bonchristiano

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## EDUCATION

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### Georgia Institute of Technology

Atlanta, GA

*B.S in Computer Science, Minor in Mathematics*

*Aug 2022 – May 2026*

- Concentrations: Computer Architecture & Artificial Intelligence
- CS Coursework: Processor Architecture, Operating Systems, FPGA Engineering
- Math Coursework: Mathematical Proofs, Combinatorics, Statistics, Probability
- Cumulative GPA: 3.82

## EXPERIENCE

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### Citadel – Commodities

New York, NY

*Software Engineering Intern*

*June 2025 – Aug 2025*

- Built a Python data pipeline using pandas to scrape and process holdings from competitor funds' disclosures.
- Architected efficient data storage paradigms to enable fast querying across large datasets.
- Designed dashboard to visualize portfolio shifts and competitor exposure trends over time.

### Georgia Tech – HPArch Lab

Atlanta, GA

*Undergraduate Researcher*

*April 2024 – Present*

- Researching resilience for post-Moore architectures as part of the High Performance Architectures lab.
- Improving accuracy for Analog Accelerators with applications in autonomous systems and supercomputers.
- Investigating soft-errors caused by cosmic radiation and error mitigation techniques for UAVs.

### Citadel – Software Infrastructure

New York, NY

*Software Engineering Intern*

*June 2024 – Aug 2024*

- Developed scripts & gRPC APIs to aggregate and visualize the firm's software & codebase statistics.
- Designed & implemented database schemas using Java Persistence API and Hibernate ORM.
- Automated data collection processes using gRPC, PostgreSQL, and Bash scripting.

### Microsoft – M365 Core

Redmond, WA

*Software Engineering Intern*

*June 2023 – Aug 2023*

- Worked on a full-stack Enterprise Resource Planning solution aimed for small & midsize companies.
- Created multiple cross-platform components and designed the application's data & state flow with Redux.
- Wrote API endpoints to interact with Azure cognitive services using TypeScript & Cosmos DB.

## PROJECTS

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### Superscalar CPU Simulator

- Implemented a cycle-accurate simulator for a superscalar out-of-order processor in C.
- Modeled key pipeline stages with register renaming, instruction scheduling, and precise in-order retirement.
- Handled realistic execution constraints including memory disambiguation, cache stalls, and structural hazards.

### Fractal Blockchain

- Developing a blockchain-based digital currency in C++ and OpenSSL for peer-to-peer communication.
- Implementing a gas-free consensus protocol to enable feeless transactions, based on Proof of Work.
- Adopting semi-inflationary tokenomics to provide utility as a real currency.

### Pipelined Processor Datapath

- Designed a number of datapaths for a RISC processor based on MIPS for a Systems course.
- Extended functionality to add interrupts and support for external I/O devices.
- Implemented data forwarding and pipeline flushing in order to resolve data & control hazards.

## SKILLS

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**Languages:** C, C++, Python, JavaScript, SQL, TypeScript, Java

**Technologies:** Linux, MongoDB, PostgreSQL, Docker, AWS, L<sup>A</sup>T<sub>E</sub>X