

# Caua Victor Tenorio Santos de Melo

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## EDUCATION

### University of North Carolina at Chapel Hill

Expected May 2028 | Chapel Hill, NC

*Bachelor of Science in Computer Science and Economics*

- Honors Carolina Student (top 10%)
- **Awards & Honors:** Full-ride Merit-Scholarship by Behring Foundation; UNC Dean's List (Fall 2024)
- Relevant Coursework: Calculus I-III; Data Structures, Algorithms, Programming Systems, Applied Statistics
- Extracurricular: Head of Finance at Brazilian Association BRASA, Carolina First-Gen Affiliate

## PROFESSIONAL EXPERIENCE

### BTG Pactual (Largest Investment Bank in LatAm) Software Engineering Intern

June 2025 - August 2025 | Sao Paulo, Brazil

- Engineered a Java Spring Boot microservice to automate manual workflows on the internal Work OS, leveraging the GraphQL API to reduce inter-service call latency by 40% and serve 25 technical teams.
- Architected an event-driven pipeline using Apache Kafka to asynchronously process 50k daily events, decoupling services and increasing end-to-end system throughput by 3.5x while maintaining idempotency.
- Built a QA automation suite (JUnit, Postman) that increased testing coverage from 55% to 94%, slashed regression incidents by 70%, and accelerated release cycles by 64% (from 2 weeks to 5 days).

### Latin American Leadership Academy

January 2024 - August 2025 | Sao Paulo, Brazil

*Tutor*

- Tutored Digital SAT Math concepts while tracking 70+ students' performance using Power BI, Google Sheets, and Khan Academy API exports with DAX dashboards for professors to monitor percentile growth.
- Analyzed pre/post SAT datasets in Python (pandas, SciPy) and Power Query, visualizing score distributions that showed a +200-point average improvement across cohorts.

*Consultant Analyst*

- Modeled 200+ applicant datasets using SQL, Tableau, and Power BI, integrating ETL pipelines and data normalization scripts to optimize scholarship allocation by ROI and merit criteria.
- Automated KPI dashboards and applicant-funnel analytics with DAX, Tableau Prep, and Python, increasing qualified applicant volume by 150% and cutting manual review time by 40%.

### AMPS (Largest Science Olympiad NGO in Brazil) President

January 2022 - August 2024 | Fortaleza, Brazil

- Scaled operations of an educational NGO from 10k to 40k students annually, managing a \$15,000 annual budget and coordinating a 60-person volunteer team using Agile/Scrum (Jira) methodologies to optimize resource deployment.
- Founded a national championship league (CNS), structuring and executing its launch to secure 12,000 participants, 75% from public schools, demonstrating project feasibility and impact to secure ongoing funding.

## RESEARCH EXPERIENCE

### UNC Kenan-Flagler Undergraduate Research Assistant of Prof. Franklin Qian

August 2024–January 2025 | Chapel Hill, NC

- Designed and built scalable ETL pipelines in Python (BeautifulSoup, Pandas, Requests) to concurrently scrape and normalize financial data from 15+ heterogeneous RESTful APIs, processing over \$2B in real estate transaction records.
- Modeled cleansed data to analyze platform liquidity risk, creating time-series visualizations in Matplotlib and interactive Tableau dashboards that identified significant investor clustering patterns.

### Federal University of Ceara Research & Technical Assistant

March 2023–March 2024 | Fortaleza, Brazil

- Conducted econometric analysis using Python (NumPy, SciPy) and R, quantifying the correlation between uranium exposure levels and regional GDP per capita.
- Produced 5 technical policy briefs influencing municipal environmental regulation and supporting business incubator projects that achieved 75%+ net profit growth within one year.

## PROJECTS

### Dungeon Crawler – COMP301 Final Project

August 2025 | Chapel Hill, NC

- Designed a loosely coupled JavaFX Dungeon Crawler (1,400+ LoC) using MVC and Observer patterns, improving code modularity and testing efficiency.
- Deployed a Java desktop application to the web using *CheerpJJ* and *WebAssembly*, overcoming runtime version constraints to achieve seamless, plugin-free browser compatibility.

### VestSmart – COMP290 Final Project

August 2024 | Chapel Hill, NC

- Built a Flask backend with a Retrieval-Augmented Generation (RAG) *Langchain* pipeline to query Brazilian college-entrance exam datasets (2 million rows) with sub-second latency.
- Developed a responsive frontend (React) consuming a custom RESTful API with real-time data visualization.

## SKILLS

**Programming:** Java, OCaml, Python, C, C#, JavaScript, Git, Docker, AWS.

**Data & Technical Skills:** Python (Pandas, NumPy, Matplotlib), R, SQL, Tableau, Power BI, ETL, API Integration.

**Interests:** Distributed systems, network optimization, AI-driven automation, multi-agent architectures, observability tooling, and large-scale cloud reliability.