

Caio Batista de Melo

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Education

- 2018–present **Ph.D. in Computer Science**, *University of California, Irvine*, GPA: 3.9/4.0.
- 2017–2018 **M.Sc. in Computer Science**, *University of Brasília*, GPA: 4.6/5.0.
- 2012–2017 **B.Sc. in Computer Science**, *University of Brasília*, GPA: 3.7/5.0.

Research & Work Experience

- 9/2018 – present **University of California, Irvine**, *Center for Embedded and Cyber-physical Systems*, Research Assistant.
Part of the the Dutt Research Group, where I am working with Prof. Nikil Dutt on the Information Processing Factory (IPF) project. My current interest is to explore how applications behave when emergent behaviors are present, and how we can detect, reason, and react to these unexpected system actions. Our goal is to enable systems to be proactive about these emerging behaviors so that they can maintain safe execution during runtime.
- 6/2022 – **Meta**, *Network Planning*, PhD Software Engineer Intern.
9/2022 Worked with the Network Planning and Network Delivery Systems teams on a project that tried to predict future link flap issues on data center devices. Link flap spikes can cause network devices to decrease their throughput by orders of magnitude, so it is important to proactively identify such problems. I created pipelines to collect and analyze data, and the model I developed was able to predict long-term issues with a 98% accuracy with only 0.4% false positive rate.
- 6/2021 – **Google**, *CloudNet Control*, Software Engineering Intern.
9/2021 Worked with the CloudNet Control (CNC) team to create validation techniques for certain data-consistency contracts throughout the CNC mesh. The CNC team is responsible for quick and reliable delivery of user configurations across the Google Cloud Platform. I designed and implemented various scrips to parse logs, find contract violations, and feed this data into dashboards to increase visualization and ease the debugging of issues.
- 6/2020 – **Google**, *Cloud CDN*, Software Engineering Intern.
9/2020 Joined the gCache team working on the Envoy Proxy, where I helped design, implement, and deploy features for the HTTP Cache Filter. I implemented the handling of Range Requests/Responses and enabled the filter to handle and cache varied responses that contain an allowed value for the Vary header.
- 6/2019 – **Cal/Amp**, *Information Security*, IT/Product Security Intern.
9/2019 Worked with the Information Security team in different projects that aim to secure the company's network and assets. Furthermore, I also took lead in a project that tried to detect anomalies to facilitate the visibility of uncommon behaviors on the network.
- 8/2016 – **University of Brasília**, *Software Engineering Lab.*, Research Assistant.
8/2018 Conducted research with Prof. Genáina Rodrigues on reliable systems by exploring different ways to analyze implied scenarios in distributed systems. I wrote a senior monograph and a master's thesis on the subject, and we published our results in the Journal of Systems and Software.
- 6/2016 – **Fordham University**, *Lab. of Informatics and Data Mining*, Research Assistant.
8/2016 Worked on the WATSHERE project, led by Prof. Frank Hsu. We used the IBM Watson framework to provide curated information for students' parents and staff of the Public School #85 in the Bronx. We published the results of this project at the 2017 Global Business and Technology Association conference.
- 2/2015 – **University of Brasília**, *Computer Science Department*, Java Development Intern.
7/2015 Helped to develop teaching tools for the Introduction to Programming class. Worked on the development of a tool that randomized exam questions among students.

Skills

Python, C, C++, Java.

Teaching Experience

- Fall '22 **University of California, Irvine**, *Instructor of Record*, ICS45C, Programming in C/C++.
- Spring '22 **University of California, Irvine**, *Instructor of Record*, CS145, Embedded Software.

Honors & Awards

- 2021 **Google Spot Bonus Award.**
- 2020 **UCI Thank a Teacher Recipient.**