

# Francisco Bruno Dias Ribeiro da Silva

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## Experience

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### Software Engineer – ITAndroids (Feb 2019 – Present)

*Background: ITAndroids is a team of university students that develop robots that play football.*

Designed and programmed a behavior for a humanoid robot to search the ball in the field. Researched and developed a method to calibrate the kinematic model of the robot using computer vision and an evolutionary algorithm (see first link). Trained and embedded a tiny YOLOv3 CNN in the robot for ball, goalposts and field markers detection (see second link). Also refactored the object detection module. Throughout the project, I gained extensive experience working with OOP principles, as the codebase is monolithic, with only certain sections (mainly telemetry) communicating via messages through ROS2.

**C++, Python; Object Oriented Programming, ROS2**

First Link: <https://fbrunodr.com/HumanoidRobotKinematicModelCalibration.pdf>

Second Link: <https://fbrunodr.com/chapeVision.mp4>

### Software Engineer – Brendi (Jul 2022 – Jan 2023)

*Background: Brendi is a B2B startup that takes care of restaurants' marketing and user experience.*

Developed an algorithm that adjusts the cost of Facebook ad campaigns. Designed a system that simulates human interaction to serve customers of restaurants via WhatsApp. The system utilizes natural language processing to accurately identify user intents and respond to queries. Additionally, I developed a subsystem that efficiently matches user orders with the restaurant's menu items, leveraging established computer science concepts such as edit distance, non-maximum suppression, and activity selection to improve performance.

**Typescript; TDD, Object Oriented Programming**

### Creator – Pong Soccer (Aug 2019 – Nov 2019)

Developed an Android game with 500+ installs on google play. The game features championship and league modes that use the same draw algorithms as major FIFA tournaments (round-robin tournament for the league mode). Also, the game uses behavior trees for the AI decision making.

**Lua; Solar2D**

Link: <https://play.google.com/store/apps/details?id=com.gmail.fbrunodr.PongSoccer>

### Software Developer – Kinea (Kinea Challenge) (Sep 2020 – Dec 2020)

Developed a system to automate the generation of real state rental contracts. The system uses a web interface to get data about the contract. Then, the back end uses that data to generate a contract as a PDF file. The system stores the data in a database, allowing for efficient retrieval and potential modification of previously generated contracts.

**Python; Flask**

## Competitive Programming

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Contributed to centroid decomposition code on USA Computing Olympiad Guide ([link](#)).

Got 15<sup>th</sup> position on International Collegiate Programming Contest Brazilian's final ([link](#)).

**Candidate Master** on Codeforces ([profile link](#)).

## Education

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### Instituto Tecnológico de Aeronáutica

M.S. in Computer Science (Expected graduation: Dec 2023)

B.E. in Aerospace Engineering (Expected graduation: Dec 2023)

### Courses

Deep Learning – DeepLearning.AI ([certificate link](#))

Software Design and Architecture – University of Alberta ([certificate link](#))

System Design - LeetCode