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Experience

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/static/HumanoidRobotKinematicModelCalibration.pdf>

Second Link: <https://fbrunodr.com/static/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 and Math

Contributed to centroid decomposition and Bellman-Ford algorithms on USA Computing Olympiad Guide ([PR1](#), [PR2](#)).

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

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

Got second prize at IMC (International Mathematics Competition) ([certificate image](#))

Education

Instituto Tecnológico de Aeronáutica

M.S. in Computer Science (Expected graduation: Jun 2024)

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