João Pedro Congio Martins

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AREAS OF INTEREST

Data Structures and Algorithms, Artificial Intelligence, Machine Learning, Cryptography

TECHNICAL SKILLS

Programming Languages: 4 years: C/C++ | 2 years: Python, Java | 4 months: Haskell, Prolog, ARM Assembly
Technologies: Git, Valgrind, gdb, Unix/bash, MySQL, HTML/CSS, Django, Godot Engine, Processing 3

EDUCATION

University of Campinas (Unicamp) graduating in Dec 2020
Bachelor of Computer Science GPA: 0.799/1

ACADEMIC ACTIVITY & AWARDS

Scholarship in Unicamp's "*Didactic Support Program*" (Teaching Assistant) in the courses *Algorithms and Computer Programming* (Python) **and *Data Structures*** (C) **for 3 semesters** (Aug 2017 - Nov 2017, Mar 2018 - Jul 2018, Mar 2019 - Jul 2019)

- Taught 60 students in each of the 3 classes;
- Provided explanation and context for the whole class in each lab assignment, answering questions the students had;
- Assisted students one on one by providing insights/hints on the assignment and by helping them debug their codes;
- Graded students' handwritten code assignments based on algorithm correctness and code syntax;
- Graded students' code assignments based on runtime performance and memory management.

Competitive programming (C, C++, Python)

- Constantly participates in programming contests such as *ACM-ICPC* (2016), *Google Code Jam* (2017, 2018) and minor ones hosted at Unicamp and online judges;
- Awarded honorable mention in the "*ACM-ICPC International Collegiate Programming Contest*" (2016);
- Awarded honorable mention in the "*Brazilian Olympiad of Informatics*" (2016).

AI for Hearthstone-inspired card game (Java) (Mar 2017 - Jun 2017)

- Programmed a bot to play a fan-made version of the game Hearthstone. Bot used heuristics such as greedy approaches and 2 different strategies/behaviors according to the game's state: *aggressive* and *controlled*;
- Competed with other students' bots on 1v1 matches, where each bot played against all the other bots and received points for winning. Placed 8th out of 56.

Database for fictional Tinder-like company (MySQL, Python) (Mar 2018 - Jun 2018)

- Assisted in designing the database by using ER modelling to define a total of 12 entities and 7 relationships between them;
- Created python scripts to extract data such as people, cities, states and countries names from the web and, along with random data, generated data for all 12 entities in form of .csv files to feed the database;
- Helped design 10 queries operations such as "list compatible people" and "generate date" and 9 database update operations.

PROJECTS

Agoraphobia (Godot Engine) (Jan 2019)
2D dialog-based simple game made in Godot Engine. Project started in the Global Game Jam 2019 with a team of 4 friends.

- Assembled and managed the team and gave the initial idea for the project;
- Programmed the game's core logic, physics and mechanics in GDScript along with the other programmer of the team;
- Programmed the game's dialog system, which was based on player's choices and key events;
- Assisted in the level design and created the player movements and some of the scenery animations in Godot`s animation system.

Simulated Ecosystem (Java, Processing 3) (Feb 2018)
Simulation of an ecosystem consisting of 7 different types of animals moving around and colliding using both Box2D and from-scratch physics. Used drawing functions from Processing 3 for the art. Made for fun.

- Implemented predatory and anti-predatory behaviors with code so each animal acted convincingly natural.

High-IQ Rockets (JavaScript, p5.js) (Jan 2018)
Simulation of a group of rockets controlled by a genetic algorithm using simple physics. Each rocket's fitness level was related to how close it got to a specific target. Genes were represented as arrays whose elements were forces to be applied to the rockets. Made for fun.

- Developed the rockets' physics from scratch using p5.js vectors;
- Implemented crossover mechanism to improve rockets' performance.

ONLINE COURSES

Design and Analysis of Algorithms (MIT OpenCourseWare), The Nature of Code (Daniel Shiffman), Automate The Boring Stuff With Python (Al Sweigart), Django 2.1 & Python (Nick Walter)

LANGUAGES: English: fluent | Portuguese: native | Spanish: basic