

# JUAN LOPES

## SOFTWARE ENGINEER

📍 Rio de Janeiro, Brazil

@ me@juanlopes.net

🌐 juanlopes.net

📄 github.com/juanlopes

🔄 February 21, 2024

## EXPERIENCE

### Staff Software Engineer, Game Server

#### Zwift

📅 Jun 2020 – Ongoing (3 yr 9 mos) 📍 Rio de Janeiro / Long Beach

- Rewrote the spatial index data structure, increasing the throughput of k-nearest neighbors queries in more than 800%.
- Implemented locality-based UDP partitioning strategy, allowing them to handle more than 300,000 concurrent users.
- Optimized low-latency server algorithms, increasing the per-server capacity in more than 500%.
- Created the main Game automation tool used by more than 100 engineers in the company.

### Lead Software Engineer, R&D

#### Intelie

📅 Aug 2011 – May 2020 (8 yrs 11 mos) 📍 Rio de Janeiro / Houston

- Responsible for the Core Platform roadmap and implementation.
- Created Intelie Pipes, a taylor-built distributed stream processing engine (🌐 pipes.intelie.com).

### Software Engineer

#### Living Consultoria

📅 Dec 2007 – Aug 2011 (3 yrs 8 mos) 📍 Rio de Janeiro

- Delivered projects for several customers around the globe, with great focus on billing solutions;

## EDUCATION

### Ph.D. in Systems Engineering and Computer Science

#### Federal University of Rio de Janeiro

📅 Jun 2017 – Jan 2020, GPA: 4.0 – Incomplete, ABD

Completed regular course, but did not finish the dissertation. Researched probabilistic streaming graph representations.

### M.Sc. in Computational Sciences

#### State University of Rio de Janeiro

📅 Mar 2014 – Mar 2017, GPA: 3.8

Researched probabilistic data structures applied to implicit graph representation

### B.Sc. in Informatics and Information Technology

#### State University of Rio de Janeiro

📅 Jan 2006 – Aug 2013, GPA: 3.0

## MOST INTERESTED IN

*I love algorithms & data structures, software optimization, and compilers. I enjoy bridging the gap between theoretical and applied computer science through code.*

## MOST PROUD OF



### Master's Thesis Award

The master's thesis "Probabilistic data structures applied to implicit graph representation" was chosen as one of the top 9 theses of 2017 by the Brazilian Computer Society.

🌐 sol.sbc.org.br/index.php/ctd/issue/view/233



### StackOverflow Rep. in [algorithm]

I have a 10k+ reputation on StackOverflow, which is not a huge number, but this still makes me proud, given I mostly only answer questions in the not-so-popular [algorithm] tag.

🌐 stackoverflow.com/users/1327235



### Competitive Programming

I really enjoy programming contests. In the IEEEExtreme, I have once won a 1<sup>st</sup> place in Brazil (2013) and 34<sup>th</sup> place worldwide (2014). In the ICPC, I was five times South-American finalist. My most popular GitHub repository is a collection of problems solved in my early training years.

📄 github.com/juanlopes/icpc



### QCon SP Program Committee

QCon is a prestigious international software conference. After many years as a regular speaker, in 2018, I was invited to be part of the Program Committee, hosting the Computer Science track in São Paulo edition.

🌐 qconsp.com/sp2020/track/ciencia-da-computacao-no-mundo-real



### Other work

I have recently been fiddling with JVM introspection and heap overhead.

📄 github.com/intelie/introspective

Using that library, I have managed to create an aggressively space optimized implementation of java.util.Map:

📄 github.com/intelie/tinymap