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# Bernardo Nogueira Borges

## Programmer

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## SKILLS

Proficient in Portuguese, English, and German, with a versatile background. Skilled in collaborative teamwork and precise problem-solving. Proven expertise in sales and requirements analysis. Enthusiastic about continuous learning and adept at applying knowledge to intricate problem-solving scenarios. Passionate about programming and dedicated to devising elegant solutions for intricate challenges, driving tangible impact and scalability. Active participant in Competitive Programming Contests including ICPC and SBC programming marathons. Involvement in scientific research in the area of automated theorem proving, under [Haniel Barbosa](#), uses the **Lean 4** language to develop new tactics.

### Technical Skills & Software:

- **Lean 4:** Started with contributing to lean-smt, diving into combining Lean's theorem proving with SMT solvers. This improved my functional programming and formal logic skills. Now, I'm working on a new project to blend Lean 4 with cutting planes logic, aiming to apply Lean's theorem-proving for formalizing and verifying optimization methods. This experience allows me to handle complex software and push the boundaries of formal verification.
- **Haskell** - Self-taught and applied in demanding projects for its safety, correctness, and pure functional programming features. Developed practical applications such as an HTTP server and delved into theoretical aspects by studying category theory. The insights from "Haskell Programming from First Principles" solidified my foundation, highlighting my ability to grasp complex concepts and apply them in real-world scenarios. Continuously expanding my Haskell expertise.
- **C/C++** - Used in multiple courses at UFMG, like *Programming and Software Development (I & II)*, *Data Structures*, *Algorithms (I & II)*,

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*Operating Systems, Computer Networks, Introduction to Artificial Intelligence, Fundamentals of Parallel and Distributed Systems* and competitive programming (see codeforces [bernborgess](#))

- **Javascript/TypeScript** - Used in Mobile and Web apps in [iJunior Soluções Digitais](#), with the React Native / React.js frameworks, lectured in Frontend bootcamp [React + MUI](#)
- **Python** - Used in multiple courses at UFMG, like *Computational Linear Algebra*, [Introduction to Data Science](#), and in the backend of the Web App *Projeto Montanhas* at [iJunior Soluções Digitais](#), with the Flask framework

#### Tools & Services:

- **Git** - used in every personal and professional project, with GitHub, GitFlow best practices and in multiple development environments
- **Visual Studio Code** - used heavily in [iJunior Soluções Digitais](#)
- **VIM** - mostly used in competitive programming, strong adoption of the editor's keybinding due to effectiveness and absence of mouse usage
- **Docker** - Container and isolation of dependencies, learned in the Cloud Computer course and applied with other tools
- **Kubernetes** - Orchestration tools for containers and microservice applications

#### Languages:

- **Portuguese** (Native)
- **English** (Fluent) - Engaged in language courses from a young age, starting at 9 and continuing until 16 years old. Additionally, gained practical experience through an exchange program in Germany and pursued technical learning through computer science courses.
- **German** (Fluent) - Attained both theoretical and practical language skills through residing in Germany, active participation in conversation

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groups, and accomplishment of the B2 Certificate by OnSet.

- **Spanish** (Conversational) - Acquired theoretical foundation through school education spanning from 2011 to 2016. Gained practical conversational skills through interactions with native speakers from various Latin American countries, including Uruguay, Argentina, Costa Rica, and Peru. This experience was obtained during participation in the AFS exchange program as well as in UFMG meetings.

## EXPERIENCE

### **Departamento de Ciência da Computação UFMG, Belo Horizonte -** *Theorem Proving Researcher*

OCTOBER 2023 - FEBRUARY 2024

Applied theorem proving with advanced Calculus of constructions, through the Lean 4 programming language. Developed new tactics for automated theorem proving, inside the [lean-smt](#) project.

### **iJunior Soluções Digitais, Belo Horizonte -** *Front End Developer*

JULY 2022 - APRIL 2023

Front-end Developer with React.js, worked on internal projects and on the platform [Par Digital](#), as software architect, leading the squad into the features and solutions of the app.

### **iJunior Soluções Digitais, Belo Horizonte -** *Business Director*

JULY 2022 - JUNE 2023

Business Director, elected in July 2022. Took part in **complex international negotiations**, product evolution and enterprise partnerships. Lead the creation of a **new Mobile product**, now with revenue of more than R\$21.000. Great responsibility in sales results and lead conversion, leading the analysts into the goals, achieving the result of R\$ 161.000 for 2022.

### **iJunior Soluções Digitais, Belo Horizonte -** *Mobile Developer*

JUNE 2021 - APRIL 2023

Mobile Developer with React Native, leading the research and development of the technology in the enterprise. Firstly developed an Instagram Clone for learning, with feed and image features. Developed the **first commercial app** "[Mirax](#)", focused on ophthalmologist featuring camera and database features, for both [iOS](#) and [Android](#). The project was a challenge, with emphasis on **camera quality** and innovative features such as **gestures** and **guidelines**.

### **iJunior Soluções Digitais, Belo Horizonte -** *Business Analyst*

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JANUARY 2021 - JUNE 2022

Business Analyst and Salesman, learning product presentation and contract realization. Worked mainly on selling two solutions, iJunior Start (Wordpress Websites) and iJunior Loop (Agile Web Systems Development) with emphasis on **Requirements analysis**, leading the customer into the meetings and building agile pricings, **estimating scope and timeframes**.

### **iJunior Soluções Digitais, Belo Horizonte** - *Backend Developer*

JANUARY 2021 - JUNE 2023

Backend Developer with Flask and Python, technologies learned in trainee and directly applied into project "[Montanhas](#)". The web application is a **hiking training manager** custom built for the customer's need, featuring user management, calendar and integration with Strava API.

## **EDUCATION**

### **AFS Exchange Program, Germany** - *High School Exchange*

FEBRUARY 2018 - JANUARY 2019

International high-school experience in Germany, living abroad with a German [host family](#) as per AFS. Took part in presentations about Brazil, the exchange world and also participated in high school classes, with enthusiasm in math and history classes. Also took part in B1-B2 level classes joining refugees in the [local course](#) in Dorsten.

### **Universidade Federal de Minas Gerais, Belo Horizonte** - *Bachelor Degree*

JANUARY 2020 - DECEMBER 2024

Bachelor Degree in [Computer Science](#) in the [best universities](#) of Brazil, with 5 out of 5 rating in 2021. Currently over with the base courses, now with a more clear view of the field of computer science and currently looking for more specific areas to learn, into software programming, artificial intelligence and robotics, also furthering the knowledge in competitive programming.

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## AWARDS

Both awards issued in official competitive programming contests, more info here <https://mineira.sbc.org.br/>

### **Offensive Cybersecurity Program**

Issued by Pacific Sec · Feb 2024

Penetration Testing and Cybersecurity Analysis training program

### **Gold Medal at X Maratona Mineira de Programação**

Issued by Maratona Mineira de Programação · May 2023

Part of the UFMG *Amigos do Detran* team, ranking 3rd out of 61 participants

### **Bronze Medal, IX Maratona Mineira de Programação**

Issued by Maratona Mineira de Programação · May 2022

Part of the UFMG *Repescados* team, ranking 9th out of 51 participants