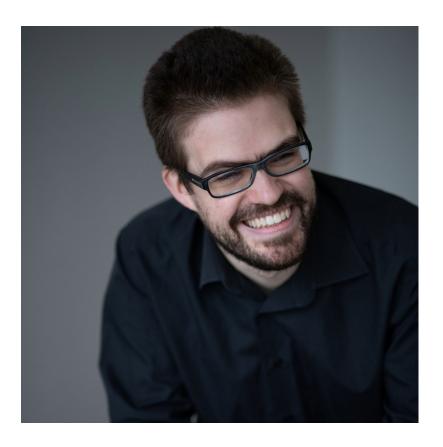# Nuno Ventura de Sousa's CV:

Contacts:
- GITHUB: https://github.com/SomeMedtnerGuy
- LINKEDIN: www.linkedin.com/in/nuno-ventura-de-sousa-177234290
- EMAIL: nunoventuradesousa@gmail.com

Programming experience:

- **Courses:**
1. Completed CS50X and CS50 Python in its entirety, and CS50 Gamedev up to second to last lesson;
2. Several unofficial courses on Godot;
3. 10-part Coursera Data Science course (in Python);
4. **42 School (focus on C and C++) (in progress, milestone 5/6).**

- **Projects:**
1. Game prototype in Lua (Love2D) about solving a maze in four dimensions;
2. Game prototype in Godot about an asteroid-evading spaceship which can only activate its thrusters/guns to the beat of the soundtrack. Implements hitboxes, three different weapons, a scoring system and visual cues to make the syncing easier;
3. "RhythmoMaker": A fully functional music teaching tool (Godot). Allows the teacher to easily and intuitively build a rhythmogram, which is a music score that highlights the rhythm at the same time the music is playing the corresponding figure. Supports sound uploading, score writing with several different symbols, automatic rhythm detection, dynamic duration definition, automatic page-turning, project saving and loading, among others. Features are showcased here: https://youtu.be/ly549D7FdWo?si=jX3tF08U36U6WDrm ;
4. Highlights from 42 Course (in C and C++):
   4.1. "so_long" (C): a 2D climbing game with smooth animations and environment effects;
   4.2. "push_swap" (C): a program which can efficiently sort integers given a specific set of predetermined rules;
   4.3. "philosophers" (C): a simulation of the dining philosophers problem using threads and mutexes;
   4.4. "minishell" (C): a small version of bash, which supports command piping, redirections (including heredoc) and environment variables, as well as several builtins;
   4.5. "miniRT" (C): a Raytracer. Supports the renderization of spheres, planes and cylinders, and allows for transformations (rotation, scaling and translation) in all dimensions, at run-time.
   4.6. "Ford-Johnson" (C++): Implementation of the Ford-Johnson algorithm, a sorting algorithm which focuses on minimum number of comparisons;
   4.7. (**in progress**) "webserv" (C++): A NGINX-inspired small web server. It allows for user-written configuration files, has an architecture which allows for multiplexing and an HTTP/1.1-compliant parser and responder, supporting GET, POST and DELETE methods, several MIME types and CGI.
5. HTML/CSS Chinese version of the application page for Radda International Piano Competition.

Other Skills:

-Fluent english, basic german;
-Great communication skills (mostly related to teaching and explanation of various concepts)
-Expert Piano Performance and Music theory level;
-Chess (Current FIDE rating: 1866);

About me:

I was born in July 1996 in Porto, Portugal. From a very early age I showed interest in piano and at 7 started learning it, having finished highschool (Portugal), Bachelor (USA) and Masters (Austria) in Piano Performance, with high distinction in all three. During my music career I have won over sixty prizes in national and international Piano Performance Competitions, and played recitals in several countries in Europe, Japan and the United States.

However, growing evermore unsatisfied with the inner workings of the professional music scene, I decided to shift my career towards programming in 2023 and, after two years teaching piano in part-time, chose to keep music performance strictly as a hobby, only accepting a couple of private students and the position of reviewer for Radda, a company which organizes Piano competitions with an educational component.

Since starting to learn programming, I have gone through several online courses, such as three of the CS50 courses (CS50X, Python and Gamedev), the full Coursera course on Data Science, and also several personal projects like a few game prototypes, a reproduction in HTML of the Radda Wordpress Webpage for Chinese consumers and Rhythmogram, a program built in Godot to help music teachers to teach rhythmic figures to students, being currently used by my mom in her music lessons in a public school. After that, I enrolled at 42Porto programming school, which focuses on C and C++ languages, where I am currently working on rank 5/6 after only eight months of official studies there and under three years of learning programming in general.

Cover Letter for InnoTech:

Dear InnoTech

I have found InnoTech through a job opening posted on Linkedin, looking for an Operating Systems Developer for Embedded Systems (C and C++ / Linux). Despite not believing that I possess (yet!) the necessary knowledge and experience to fulfill the "Mid-Senior" level required, I still would like to make my case for why I think I would be a great investment for the future, and, why not, try my luck to see if you are interested on someone with my profile for your company.

The reason why I decided to get in touch with you anyways is that this is the kind of position I imagined myself in since shortly after starting to study at 42 Programming school. Working with low level programming languages (especially C; C++ is still work in progress) scratches an itch I've always had in me: not only making things work, but understanding *why* they work to the most basic detail possible. I believe that is the key to seamlessly incorporate new features and smoothly solve bugs, and I feel that my joy for this kind of micro-control and desire of understanding (together, naturally, with a brutal hard-work methodology which I have carried over from my musician days) is the reason why I have been quite successful at the school so far, despite my lack of previous knowledge.

I get once in a while the comment "C will not help you in the workplace in the future" by "42-skeptics" – to which I answer that it is the knowledge and *philosophy* of programming which coding in C develops that will allow me to be a great programmer in the future, no matter the language. I have said several times though, that I would be very happy working in C/C++ as an end, not just a mean, for example for OS development and other low-level products. That is why I got so excited when your job opening showed up on my Linkedin, and here I am.

Thanks for the time devoted to reading this letter. I would appreciate if you could let me know what you think, and I am obviously open to provide more info or discuss things further as it seems best fit for you. Contacts are listed above.

Best wishes for a great 2025!

Nuno Ventura de Sousa