

# Franco Aparicio

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## EDUCATION

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### University of Toronto

*Honours Bachelor of Science in Computer Science*

Greater Toronto Area, CAN

*September 2022 – Present*

### St. George's The British International School

*International Baccalaureate Diploma: 40/45*

*International General Certificate of Secondary Education (IGCSE): 9 in total*

Düsseldorf, DE

*August 2020 – May 2022*

*August 2019 – May 2020*

### California High School

*High School Diploma: 1st year GPA: 4.0*

San Ramon, USA

*August 2018 – June 2019*

## EXPERIENCE

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### By George! (Student Podcast) Co-Founder

*St. George's The British International School*

August 2021 – June 2022

*Düsseldorf, DE*

- Founded, set-up, and helped produce the first podcast
- Worked in a team to plan, research, record, and edit each episode
- Established a working production model for the future of the podcast

### Introduction to Artificial Intelligence with Python

*HarvardX*

June 2020 – January 2021

*Remote*

- Finding a solution to a problem using various search algorithms
- Representing information and drawing inferences using AI
- Creating AI that makes optimal decisions given limited information and uncertainty
- Algorithms to solve optimization problems
- Using data to train AI to recognize patterns and become able to execute tasks on its own
- Implement a *convolutional neural network* using *Tensorflow*
- Perform simple natural language processing such as tokenization

## PROJECTS

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### IB Timetabler | *Blazor, Electron.NET, C#, HTML, CSS, SQLite*

September 2021 – March 2022

- Developed a full-stack desktop application using Blazer server application framework and Electron.NET
- Implemented a modified version of the *Forward Checking* algorithm to generate timetables without conflicts
- Created an intuitive UI to view, manage, and export timetables
- Used various asynchronous processes and custom events/event listeners
- Produced UML, entity relationship, and flowchart diagrams along with concise documentation for the project

### Sudoku as a Constraint Satisfaction Problem (CSP) | *C#, Python*

May 2021 – August 2022

- Implemented a Sudoku grid generator capable of creating boards of up to  $25 \times 25$
- Posed Sudoku problems as CSPs in C# using OOP
- Coded the *Forward Checking* (FC) and *Maintaining Arc Consistency* (MAC) algorithms
- Collected and processed data comparing FC and MAC in a Microsoft Excel spreadsheet using Python
- Produced an extended piece of writing ( $\sim 4000$  words) on the topic and findings

### Connect4 Game | *Python*

January 2020 – Present

- Continuously revisit and improve upon previous versions
- Programmed local multiplayer and an AI of variable difficulty
- Implemented the *minimax* algorithm including alpha-beta pruning and a depth limit

## TECHNICAL SKILLS

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**Languages:** C#, Python, SQL (SQLite), HTML/CSS

**Frameworks:** Blazor, Electron.NET, Flask, Bootstrap, Bulma

**Developer Tools:** Git, Rider, PyCharm, Visual Studio, Atom, DB Browser

**Libraries:** NumPy, Tensorflow, Scikit-learn, RegEx, Openpyxl

**Other:** Regular Linux and Windows user