Ulysse Carion

Curriculum Vitæ

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Github: https://github.com/ulyssecarion
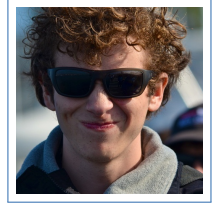
Education

2010–Present **La Jolla High School**, *GPA − 4.0*.

Experience

Internships

2012 **Summer Intern**, SAN DIEGO SUPERCOMPUTER CENTER, University of California, San Diego.
Gathered data from the Immune Epitope Database (IEDB) to identify and display information on epitopes, antigens, antibodies, MHC molecules, and T-cell receptors at different levels of sequence homology.

2011 **Summer intern**, SAILOR RESEARCH GROUP, University of California, San Diego.
Gathered diffraction grating data for a research project.

Detailed achievements:
○ Data collected is now in a published paper in *Advanced Optical Matierals*: *Topological control of porous silicon photonic crystals by microcontact printing* (available online at: `http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)2195-1071`).
○ Worked with non-English-speaking student from France.

Miscellaneous

2011–Present **Math Tutor**.
Tutored high school students taking math classes ranging from geometry to pre-calculus.

Awards

2013 Honorable Mention − California State Science Fair

2013 1ˢᵗ Award − Greater San Diego Science & Engineering Fair

2013 Finalist − 2013 San Diego Mayor's Cyber Cup Challenge

2011 1ˢᵗ Place − San Diego Science Alliance "Green Skills For Life" Video Competition

Computer skills

Basic PHP, Lua, YACC, OpenGL / WebGL

Intermediate HTML / CSS, Ruby on Rails, C, Git, JavaScript

Advanced Java, Ruby

Projects

2013   **WebGL Audio-Visual Demonstration**.

The Musical Turk is a Javascript-based WebGL experiment. It uses three.js and midi.js for visual and auditory output. Inspired by Animusic's *Pipe Dream*, the program shows a 3D cannon that fires marbles that land onto a xylophone in sync with music. The program also features very effective and dynamic techniques at handling lag due to processing time for rendering or music-playing.

Run it in your browser: (Chrome only)
`http://ulyssecarion.github.io/turk`
Source and more info available at:
`https://github.com/ulyssecarion/turk`

2012   **Mutable Programming Language**.

Created a programming language called "Interlingua" where the keywords (i.e. `if`, `while`, etc.) are user-defined. This could allow the user to very quickly create languages that naturally read like their native tongue. The language features object-orientation, method overriding, and monkey patching.

Source and more info available at:
`https://github.com/ulyssecarion/interlingua`

2012   **Chess-Playing Computer Program**.

Program plays chess at a very high level of skill. Capable of looping through millions of positions per second, it can defeat around 99.89% of chess players. Also has an online counterpart made with Selenium Webdriver that can play on its own on chess.com.

Was the subject of a science fair project: *Creating a Chess-Playing Computer Program*.

Source and more info available at:
`https://github.com/ulyssecarion/godot`

Testing

SAT   2280 (Math: 760, Reading: 760, Writing: 760)

SAT II   Physics: 800
Math II: 800

AP

AP Course	Score	AP Course	Score	AP Course	Score
Physics (Mechanics)	5	European History	5	US History	5
Computer Science	5	Calculus (AB)	5	Biology	5
English Composition	5	Calculus (BC)	5	French	5