Ulysse Carion

Curriculum Vitæ

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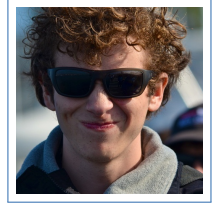
Education

2010–Present   **La Jolla High School**, *GPA − 4.0*.
Currently enrolled in highest-level classes offered in Biology and Computer Science.

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, JavaScript, Lua, YACC, OpenGL / WebGL
Intermediate   HTML / CSS, LaTeX, Ruby on Rails, C, SQL, Git
Advanced   Java, Ruby

Projects

2013   **Modern Web Design**.

Built a personal website from scratch. It uses Flat UI, Boostrap, and Font Awesome for many CSS classes, and has responsive styles that, through @media rules, look good on desktops and mobile devices.

Available online at: `http://ulyssecarion.com`

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   Physics (Mechanics): 5
Computer Science: 5
European History: 5