

# Nils Carlson

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Email for additional contact info

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## Education

University of Massachusetts Amherst  
Computer Science, Graduating 2019

3.6/4.0 GPA

High School Diploma with Honors, Graduated 2015

3.9/4.0 GPA

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## Technical Work

Freelance Programmer with Custom Software Solutions **2017-Present**

- Developed and implemented custom built software for companies nationwide
- Multidisciplinary: from web dev, to Unity mobile games, to academic research tools

Coding Instructor with iD Tech Computer Education **2017**

- Designed curriculum and taught classes (ages 7 to 17)
- Taught a myriad of topics, including Web Design, Java, Game Design

Programming Consultant and Educator with Amherst High **2015-2016**

- Helped design 'Green Sensors' to gather data on the time elementary students spend in nature.
- Worked with a team of high school students to produce effective, cheap, and easily replicated sensors

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## Coding Languages

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|---------------------|-----------------|
| ◆ <b>Java</b>       | ◆ <b>Python</b> |
| ◆ <b>Javascript</b> | ◆ <b>C#</b>     |
| ◆ <b>HTML</b>       | ◆ <b>C</b>      |
| ◆ <b>CSS</b>        | ◆ <b>Scala</b>  |

## Other Skills

- ◆ Technology Specific Education
- ◆ Game Design (Unity)
- ◆ Public Speaking
- ◆ Graphic Design  
(Adobe Photoshop)

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## Relevant Coursework

- **Data Structures**  
Designing and implementing generic data, linked structures, binary trees, hash tables, etc.
- **Computer Systems Principles**  
Writing in C and assembly, modeling low-level systems, such as caches, compression, etc.
- **Web Programming**  
Using Javascript, HTML and CSS to build a website from scratch with a team.
- **Computation**  
Discrete mathematics, number theory, predicate calculus, etc to apply to algorithm design.
- **Algorithms**
- **Calculus I & II**
- **Statistics**

## Selected Personal Projects

- **Neural Network Chatbot & Visualizer - Java**  
And educational tool for visualizing the inner workings of a pure-java neural network tasked casual or context specific conversation.
- **Synesthesia Vision - Javascript, HTML**  
A chrome extension that alters the text of any webpage according to the sensation of synesthesia, a condition where one associates specific colors each character.
- **Altruism Simulator - Java**  
A visual program designed to test the theory of 'Kin Selection', arbitrary organisms evolve in parallel, with one trait being their generosity as per 'Hamilton's Rule'.
- **Sudoku Solver - Scala**  
Recursive-only solution to the parsing, manipulation, and solving of the classic puzzle. Optimized.

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## Misc. Recognitions

People to People Representative / Winifred Webb English Excellence Award / National Honor Society Member