Nils Carlson

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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**

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

Coding Languages

- *Java*
- *Javascript*
- *HTML*
- *CSS*
- *Python*
- *C#*
- *C*
- *Scala*

Other Skills

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

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

- **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'
- **Spreadsheet-To-Cards** - Javascript, HTML
  Programmatically taking any csv, excel, or any other spreadsheet data and creating a set of HTML elements to display the information as cards. Can be used for card games, flash cards, speech prompts, etc.
- **OCR Neural Network Visualizer** - Java
  And educational tool for visualizing the inner workings of a scratch-written neural network tasked with optical character recognition
- **Sudoku Solver** - Scala
  Recursive-only solution to the parsing, manipulation, and solving of the classic puzzle. Optimized.

Misc. Recognitions

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