

# Paul Magnus

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## Computing Skills

- Experienced with Python
  - Working knowledge of C++, Java, Bash, HTML, and CSS
  - Some experience with R, MIPS Assembly, OpenGL
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## Projects and Experience

### PyShell: Shell Scripting for Python

February 2018 - May 2018

- Designed and implemented the PyShell language for easy shell scripting within Python.
- Researched varieties of existing shell languages.
- Expanded Bash-style syntax to allow for delayed execution and dynamic construction of shell statements.
- Managed multiple project deadlines throughout four month project

### Genetic Programming Artificial Intelligence for Space Invaders

September 2017 - December 2017

- Designed and tested a genetic programming system for machine learning of Space Invaders game.
- Experimented on the effects of different genetic operators and selection methods on population diversity and the effectiveness of evolved programs.
- Used the programming languages Clojure, Java, and Push together.

### CSPy: Statically-Typed Python and Graphics System

May 2017 - July 2017

- Collaborated with other team members to develop a new dialect of Python designed for teaching introductory programming
- Created and actively updated a related graphics system used by all introductory computer science courses at the college.
- Wrote maintainable code in a team environment for a multi-year project.

### Economics Market Simulation in R

September 2017 - December 2017

- Developed a system for comparing the differences between model selection agents in a market simulation.
- Generalized simulation for arbitrary number of parameters and length of forecast formula.
- Executed research simulations for continuing professor's research with other team members.

### Computer Science Teaching Assistant

February 2015 - May 2018

- Tutored and graded students in the Computer Science department at Hamilton College.
  - Guided students towards efficient and correct algorithms and solutions.
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## Education

**Hamilton College**, *Bachelor of Arts Cum Laude*, Clinton, NY

Concentrations: *Computer Science Honors and Mathematics*

Cumulative GPA: 3.76

Tompkins Prize in Mathematics

*Algorithms, Computer Architecture, Genetic Programming, Complex Analysis, Topology*

**Aquincum Institute of Technology**, Budapest, Hungary

*Computer Graphics, Computer Vision, Cryptography*