

# Paul Magnus

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## Computing Skills

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

More details and other projects at pauljmagnus.com

### Independent Senior Project - PyShell: Shell Scripting for Python

February 2018 - May 2018

#### *Awarded Departmental Honors*

- Designed a new dialect of Python with joint Python and Bash-style syntax to simplify integrating shell scripting within general purpose programming and built a preliminary implementation for this design.
- Extended Bash-style syntax to allow for delayed execution and dynamic construction of general purpose scripts including complex pipe-based graph structures.
- Presented results of 4 months of work to a large group of fellow students and professors.

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

May 2017 - July 2017

#### *Lead Researcher*

- Led design and development of all aspects of the project for the summer including the structure of the new programming language, an associated integrated development environment (IDE), and graphics library.
- Actively updated and bug fixed the graphics library while it was being used during the following year for the introductory computer science courses at Hamilton College.
- Extended and documented source 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 market simulation and generalized simulation for arbitrary number of parameters and length of forecast formula using least squares, ridge regression, and lasso prediction methods.
- Worked with team members to understand the results of the model comparisons and develop insightful simulation tests for use on the HPC.

### Computer Science Teaching Assistant

February 2015 - May 2018

- Tutored and graded students for up to 7 hours per week 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

September 2014 - May 2018

Concentrations: *Computer Science and Mathematics*

Cumulative GPA: 3.76

Tompkins Prize in Mathematics

Relevant Coursework: Algorithms, Computer Architecture, Genetic Programming, Complex Analysis, Topology

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

Fall 2016

Relevant Coursework: Computer Graphics, Computer Vision, Cryptography