ALEXANDER FISCHER

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Education

University of Massachusetts, Amherst, MA   2016–2020
- Double majoring in computer science and mathematics (concentration: pure math)
- GPA: 4.0
- **Relevant Computer Science Coursework–**Computer Systems Principles (ongoing), Reasoning Under Uncertainty (ongoing), Honors Programming with Data Structures, Introduction to Computer Science
- **Relevant Mathematics Coursework–**Introduction to Mathematical Cryptography (ongoing), Discrete Structures (ongoing), Statistics, Multivariable Calculus, Linear Algebra, Differential Equations, Modern Analysis, Complex Variables

Skills
- **Programming Languages**–Java (including Android), C, HTML/CSS/Javascript.
- **Technologies**–Linux/Unix, LaTeX, Git, Eclipse, Android Studio.

Experience

Personal/Class Projects
- **Chamberwell**–Android game published on Google Play where one has to tilt the screen to move balls into the correct chambers. Uses Java, Android.
- **Mandelbrot set renderer**–renders images of the Mandelbrot set with smooth coloring and multithreading. Uses Java.
- **Automata renderer**–renders Wolfram's elementary cellular automata and Conway's Game of Life. Uses Java.
- **SPIRE autoenroller**–continuously checks if a class is open then automatically enrolls one in it if so. Uses Java, Selenium.
- **Franklin High School ID search**–website and chrome extension that allows Franklin High School students to search for their classmates' email addresses by name. Uses HTML, JavaScript.
- **Quadratic Sieve**–implemented quadratic sieve factoring algorithm as part of cryptography group project. Uses C.
- See personal website (http://alexfischer.me) for more detailed information on projects

Hackathons
- **HackHolyoke 2016**–won best hardware hack for prototype of a bike lock that could be unlocked with a phone using Bluetooth low energy. Uses Arduino, C.
- **HackUMass 2016**–created a game where a physical maze is controlled by rotating one's hand above a VR hand tracker to move a ball through the maze. Project was selected as one of Devpost's projects of the week and included in their newsletter. Uses Leap Motion, Java, Raspberry Pi, servo motors, Python.
- **HampHack 2017**–used Indico machine learning API to build an Android camera app that takes a group photo only when the right number of people are in the frame and when they are all smiling. Uses Java, Android.

Undergraduate Teaching Assistant   Spring 2017
- Undergraduate TA for computer science class 'Programming with Data Structures'

Town of Franklin IT Department, Franklin, MA   2014–2016
- Volunteered to set up computer systems in new high school while it was under construction (summer 2014)
- Continued to volunteer with Franklin High School's IT department thereafter

Honors/Awards
- National Merit Scholar–received corporate scholarship from MMC corporation, 2016
- Member of Commonwealth Honors College at University of Massachusetts
- Finished second in University of Massachusetts ACM's annual programming contest, 2016
- Finished first in University of Massachusetts ACM's annual Cisco programming contest, 2017
- Finished second in 2017 Jacob-Cohen-Killam Mathematics Competition–competition for freshman and sophomores at University of Massachusetts, Amherst