

# Andrew Nolte

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Github: <https://github.com/AndrewNolte>

## Projects and Programming Experience

- **Webcrawler and Query Engine** December 2018
  - Crawled and efficiently indexed a web, built query engine with **shunting algorithm**
- **Tetris, Tetris AI** October 2018
  - Wrote Tetris and Tetris AI using **genetic algorithm** in Java
- **Random Writer** September 2018
  - Created natural language replicator using **Markov Chain** algorithm
- **Robot Programming** for Texas Aerial Robotics 2018 – Present
  - ROS (Robot Operating System), Ardupilot, Linux, Gazebo, C++
- **Personal website** Spring 2018
  - Used **Google's Materialize CSS** classes to create aesthetically pleasing website that displays graphs from math and physics, and other information
- **Motion Planner Application** Fall 2017
  - Used processing, an extension of Java, to create application for planning paths for the robot to take, then printing out generated coordinates to be used in robot code. Uses line and bezier curves, overlaid on an image of the game field.
- **Robot Programming** for FRC robotics, Programming Captain 2016 – 2018
  - Computer vision with **OpenCV**: made filters to identify x and y coordinates for objects, sorted based on apparent distance, and used coordinates to guide robot autonomously
  - **Autonomous path planning/Control theory**: planned paths using multiple curve and **PID** techniques, trapezoidal and sinusoidal motion plans
- **UIL competitions, Codewars** 2014 – 2018
  - Used Java to solve many complex and classical programming problems in a timed competition

## Education

The University of Texas at Austin May 2022  
**B.S. Computer Science, Turing Scholars Honors Program**  
Data Structures      Discrete Math      Vector Calculus  
Klein Oak High School, Summa Cum Laude June 2018

## Work experience

- **Chegg Tutor** Summer 2018
  - Tutored mainly college students in math and computer science
  - Conducted UX interview with researchers, pointed out bugs and suggested changes
- **Mathnasium** January – August 2018
  - Tutored students aged 5-17 in math, worked with student database

## Honors / Activities

- **Texas Aerial Robotics** 2018 – Present
- **Association for Computing Machinery** 2018 – Present
- **Vortex 3735 (Klein ISD Robotics Team), Programming Captain** 2016 – 2018
  - Lead a group of programmers in developing robot code for FRC team (FIRST Robotics Competition)
- **Boy Scouts of America, Eagle Scout** with bronze palm 2010 – 2018
- **Zeta Omicron (High School CS honor society)** 2015 – 2018
  - Competed, placed in various UIL CS competitions and placed 8th in HP CodeWars in 2017

**Interests:** Biking, Climbing, Robotics, Table Tennis, AI, Coding Competitions, Skiing, Ultimate Frisbee

Java  
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Python  
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Web stack  
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C++  
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Git  
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