

# Joseph Ryan

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## Education

University of Texas at Austin - Cockrell School of Engineering

August 2017

Intended Degree: Bachelor of Science, Electrical Engineering

William G. Enloe High School

August 2013 - June 2017

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## Experience

FIRST Robotics

August 2016 - Present

Team Lead / Head Programmer

- Managed 50 teammates as an elected board member
- Directed 10 developers on multiple software projects
- Used version control, continuous integration, and unit testing with Java, C++, and Python
- Integrated libraries such as OpenCV for autonomous vision tracking

Science Math Interactive Learning Experience (SMILE)

July 2016 - Present

Teacher and Counselor at STEM summer camp

- Mentored elementary and middle school students during week long courses
  - Taught basic circuitry, microcontroller programming (Arduino-C++), Android app development (Java), and robotics (C)
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## Projects

Genetically Evolving Neural Network (C++)

- General purpose machine learning algorithm for real time applications
- Used a blend of neural networks and genetic algorithms for competitive training

The Elements of Computing Systems (HDL, ASM, Jack, Python)

- Completed online course on computer architecture, assembly, and compilers
- Coursework included design projects such as a CPU simulated in HDL, an operating system, a compiler, a virtual machine translator, and an assembler

Handwritten Character Recognition (Python)

- Wrote a machine learning digit classifier using a weighted kNN algorithm
- Increased accuracy of recognition to 98% while maintaining high performance

Physics Engine (Python)

- 2D Newtonian physics simulation with gravity, kinetic friction, inelastic collisions, etc.
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## Technical Skills

Languages

Python, C++, Java

Other

Git, Markdown, Junit, OpenCV, CMake, Gradle