

MAX KNUTSEN

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EDUCATION

University of Maryland, Baltimore County, Baltimore, Maryland

Bachelor of Science in Computer Science

Expected Graduation: May 2016

McLean High School, McLean, Virginia

Advanced Diploma

Graduated: June 2013

PROJECTS

Real Time Artificial Intelligence

March 2015 — Present

Developed a two dimensional shooting game with mechanics constrained to shooting, shielding, and vertical movement. This was used to construct a real time decision tree so the computer uses the human's recent actions to determine what they seem to be doing, and then reacts appropriately using modular action sequences.

Retriever Robotics

September 2013 — Present

Held the position of lead programmer from 2013 to 2015 and treasurer during the 2014 — 2015 season. Worked on the design and programming of a versatile mobile robot that was capable of manipulating objects, navigating obstacles, and hanging itself from a 40" bar for use the VEX Toss Up competition. The following year, I had the same role in developing a robot that could arrange vertical tubes on the map, as a part of the VEX Skyrise Competition.

Boggle

September 2013

Contrasted the performance of a trie and hash table to quickly search through the dictionary. Used Java to create a responsive and intuitive Graphical User Interface for the classic board game.

Connect Four

January — May 2013

Utilized a Minimax tree to traverse five layers of potential moves and minimize the potential worst case scenario. Created an artistic GUI in Java with animations and sound effects, as well as several menus.

WORK EXPERIENCE

Cougaar Software, Inc. — Junior Software Engineer Intern — Vienna, Virginia

June 2014 — Present

Designed a modular, goal-oriented robotics framework. Then used Cougaar Software's Active Edge communication network to implement two sample robotics systems. The robotics systems were comprised of multiple Raspberry Pis, which communicated over a distributed computer network. Also designed and implemented a serial communication grammar for Raspberry Pis to task an Arduino Uno.

TIC Summer Camp — Robotics Counselor — McLean, Virginia

Summer 2012 & 2013

Instructed children between the ages of 6 and 16 on design concepts as well as programming in Lego Mindstorms and RobotC.