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

I developed a small two dimensional shooting game with simple mechanics: the player can shoot, shield, and move up and down. As a practical exercise in understanding how artificial intelligence in video games works, I constructed a sort of real time decision tree so the computer can play against a human. It 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

As a part of Retriever Robotics, I worked on the design and programming of a small robot that could toss a small ball, move the small and large scoring objects around the game board, and hang 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. During both seasons, I had the role of lead programmer. That position involved mentoring a student during the 2014-15 season. During that season I was also the treasurer for our organization.

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.