

Isaac B. Love

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Education:

- Fall 2020 - present University of Illinois, Urbana-Champaign, IL
Doctoral program in Computer Science; research area: motion planning for autonomous robots, advisor: Dr. Nancy Amato
- Fall 2015 - June 2020 University of Washington, Seattle, WA
Interdisciplinary Honors; GPA: 3.89/4.00
Bachelor of Science in Computer Engineering, College Honors, Magna cum Laude
Bachelor of Science in Mathematics, College Honors, Magna cum Laude
- Fall 2017 - Spring 2020 Research in Sensor Systems Laboratory, University of Washington
Dr. Joshua Smith, Milton and Delia Zeutschel Professor, Computer Science and Engineering, Electrical and Computer Engineering, and Lab Director, Honors thesis: Using a Non-Iterative Inverse Kinematic Method to Imitate a Human Arm with a PR2 Robot
- Fall 2019 - Spring 2020 Research in Department of Mathematics, University of Washington
Dr. James Morrow, Barbara Sando and Vaho Rebasoo Term Professor in Mathematics
Honors thesis: Levenberg-Marquardt Algorithm in Robotic Controls
- Fall 2011 - Spring 2015 Pullman High School, Pullman, WA
Graduated with Honors, Senior Project: built/programmed a robot to use Pixie vision sensor camera images to autonomously find and navigate to a certain color block among various blocks scattered randomly on a game floor

Awards/Honors:

- Spring 2020 Outstanding Graduating Senior in Mathematics (B.S. Standard Major) for 2019-2020, one award given each year, University of Washington Department of Mathematics
- 2020 - present Phi Beta Kappa, Member
- 2018 - present Tau Beta Pi, Engineering Honor Society, Member
- 2015 - 2020 University of Washington, Seattle, WA, Dean's List: Autumn 2015, Winter 2016, Spring 2016, Autumn 2016, Winter 2017, Autumn 2017, Spring 2018, Autumn 2018, Winter 2019, Spring 2019, Autumn 2019, Winter 2020, Spring 2020; Annual Dean's List: 2015-2016, 2018-2019, 2019-2020
- Fall 2015 Won the UW Fall 2015 CSE 142 programming tournament for section of several hundred students. Critters game featured simple rules but complex player interactions for many competitive strategies. Student efforts were pitted in an autonomous virtual four-person free-for-all elimination tournament. My submission beat all entries and won the tournament
- Spring 2015 Student of the Month, March 2015, Pullman High School, Pullman Chamber of Commerce
- Fall 2011 - Spring 2015 FIRST Robotics Team 4061 Palouse SciBorgs
Team Captain 2015; team won several awards for creativity and excellence in engineering during annual competitions: Judges Award (2013 regional), Excellence in Engineering Award (Delphi) (won at two 2014 regional competitions and at 2015 PNW Championships),

Creativity Award (Xerox) (won one at 2014 PNW Championships and two at 2015 regionals)

Skills: Linux, Windows, ROS; C, C++, Java, Python, LabView, SolidWorks CAD;
Revision control software GitHub; Microsoft Office;
Experience soldering, bread board circuits, wiring, building robots, Willow Garage PR2 robot and Gazebo simulator, Fetch research robot, Arduino, NVIDIA Jetson, Raspberry Pi

Employment:

Fall 2020 University of Illinois, Urban-Champaign, IL
Department of Computer Science
Teaching assistant for CS 241 System Programming

Summer 2017 Internship at Klar Scientific, LLC, Pullman, WA

Summer 2018 Research for a start-up that markets a microscope for advanced spectral analysis. Worked to
Summer 2019 prototype an autofocus for the microscope, demonstrate feasibility of operating microscope with limited computing resources, researched and migrated analysis from CPU-based system to GPU-based system, speeding computation from days to minutes

Activities:

Summer 2019 Designed and built two high-end desktop computers using off-the-shelf components

Fall 2017 - University of Washington Advanced Robotics
Spring 2018 Used machine learning with cameras to improve automatic turret aiming

Winter 2016 - University of Washington Society for Advanced Rocket Propulsion (SARP)
Spring 2017 Avionics and Recovery sub-team. Programmed a remote-controlled rover that drove and transmitted video of its surroundings after leaving the rocket (2017); designed and programmed data collection system for telemetry, worked on designing and building the sending and receiving systems (2017); programmed data collection system for telemetry (2016)

Summer 2015 Designed and built high-end desktop computer from off-the-shelf components

Fall 2011 - FIRST Robotics Team 4061, Pullman, WA
Spring 2015 Founding student member of Team 4061 Palouse SciBorgs in Fall 2011; Team Captain 2015; Physical builds of all robots; focused on software and control programming of the robots; Spring 2012 robot used LabView; Spring 2013, 2014, and 2015 robots programmed in C++; worked with professional engineer mentors; software was developed according to plan with revision control, code review, and cumulative testing; member of drive-team that controlled the robots in competitions in 2012, 2013 and 2015; mentored younger students in programming and debugging code; team finished in top 75 out of 3,000 in 2015; team won several awards for creativity and excellence in engineering

Fall 2011 - Pullman High School Orchestra, Violin
Spring 2015 Orchestra placed in various competitions and played several community concerts each year

Fall 2013 - Pullman High School Knowledge Bowl Team
Spring 2015 Team competition to display general and specific knowledge of history, math, literature, science. Part of the competition team that went to regionals and to Washington State competition