Benjamin D. Church

# Employment Experience

* Silver’s Garage, groundskeeper, July & August, 2010
* Valentino’s Ristorante, chef’s assistant / waiter, August, 2011
* Lobster Point Properties, laborer (landscaping), May-August, 2012
* Queen’s University, Department of Mechanical and Materials Engineering, Nuclear Materials Research Group, research assistant under Dr. Mark Daymond, May-August, 2013
  + Modified third party MATLAB program in order to analyze diffraction data
  + Wrote MATLAB scrip to find twinning volume fraction from pole figure data
  + Wrote MATLAB script to find 0.2% strain offset from tensile test data
  + Prepared metal samples and took pictures using a scanning electron microscope to estimate grain sizes
* Queen’s University, Department of Mechanical and Materials Engineering, Intelligent Automation Laboratory, research assistant under Dr. Brian Surgenor, May-August, 2014
  + Designed test cell to control lighting conditions for computer vison based inspection program
  + Designed stepper motor driver circuit to rotate targets under camera, as they were rotated on the assembly line
  + Developed a computer vision based inspection program in Vision Builder to check for the presence of O-rings on the disk rotated by stepper motor
  + Designed Arduino circuit to communicate RFID data to a computer for mobile robot traffic control system
  + Wrote MATLAB program that animated the robots as they were detected by the RFID readers
* Treeline Reforestation, tree planter, May & June, 2015

# Relevant Skills and Experience

* Computer programming including MATLAB, PBASIC, Vision Builder, Arduino, Robot C, and C++
* Computer-aided design using Solid Edge
* Familiarity with machine vision programs for automated inspection (in Vision Builder)
* Component selection and circuit design
* Closed-loop mobile robot programming
* Documentation of design process in studio laboratory setting

# Publications

* M. S. Holden, C. N. Wang, K. MacNeil, B. Church, L. Hookey, G. Fichtinger, T. Ungi. Assessing Technical Competence in Simulated Colonoscopy Using Joint Motion Analysis. 15th Annual Imaging Network of Ontario Symposium, London, ON, Mar 15-16, 2017 (in review).

# Awards

* Queen’s Principal Scholarship for applying to Queen’s with a high school average of 95% or above
* Placed on the Dean’s Honor List with Distinction for achieving a GPA in the top 3% of the faculty of Arts and Science, 2012
* Natural Sciences and Engineering Research Council of Canada (NSERC) Undergraduate Student Research Award (USRA), 2013
* Dean’s Scholar in the Faculty of Engineering and Applied Sciences, Queen’s University, 2013
* NSERC USRA, 2014
* Lorne C. Elder Scholarship in Mechanical & Materials Engineering, Queen’s University, 2014
* George Christie Design Award, Queen’s University, 2015
* Dean’s Scholar, Queen’s University, 2015
* NSERC Canadian Graduate Scholarship – Master’s (CGS-M), 2016-2017

# Education

* Bachelor of Science Engineering in Mechanical Engineering, general option from Queen’s University, completed 2015
* Currently enrolled in a Master’s of Computer Science at Queen’s University in the Perk Lab as a Master’s of Science student

# Volunteer Work

* Mentor, Bridgewater Barracudas Swim Club; 2007, 2008
* Traveled to Poland with Coalition for Kids to grant wishes to terminally ill children, 2010
* Charity work done in Bobong, Kenya