

Joshua Holbrook

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Skills and Qualifications:

- Proficient with Microsoft Office suite and GNU/Linux; and experience with COMSOL Multiphysics 3.5
- Proficient with MATLAB, python/scipy and LabVIEW; and experience with bash and javascript

Education:

Master of Science in Mechanical Engineering *Sept. 2009 – May. 2011*
Thesis: The Determination of Anisotropic Thermal Conductivity with Thermal Needle Probe Measurement
3.62 GPA

Bachelor of Science in Mechanical Engineering, Cum Laude *Aug. 2005 – May 2010*
Minor in Mathematics 3.67 GPA

High School Diploma *May 2005*
3.73 GPA

Projects:

The Determination of Anisotropic Thermal Conductivity with Thermal Needle Probe Measurements *May 2010 – May 2011*

- Masters Thesis
- Numerical component involving 3-D modeling with comsol and matlab to simulate thermal needle probe measurements
- Lab measurement component involving engineered anisotropic materials

Node-Chess *August 28, 2010 – August 29th, 2010*

- A Node Knockout contest submission
- Personally responsible for most of the art and some of the UI
- Written in only 48 hours
- Hosted at <http://dark-knights.no.de>

Lulzbot *July 2010 – December 2010*

- IRC Bot
- First significant project in javascript and node.js
- Watched github, checked weather
- Source at <https://github.com/jesusabdullah/lulzbot>

Methlabs *June 2010 – August 2010*

- A collection of tools for Matlab
- m-files inspired by functional programming paradigms such as those in Haskell
- Includes a python script that allows shebanged scripts to be interpreted by Matlab

Counting of Stream Crossings Along a Path Between Two Given Alaskan Villages *March 2010 – May 2010*

- Used python and qgis
- First experience with ESRI shapefiles and GIS in general
- Part of a feasibility study on laying unburied fiber optic cable over tundra in remote regions of Alaska

Super Four-Bar Explorer

December 2008

- A program written in python that uses a Gauss-Newton unconstrained optimization algorithm to fit the path traced by a four bar linkage to a given set of points
- Accompanied by a spreadsheet that illustrates four-bar linkage traced paths

Service:

American Society of Mechanical Engineers, Student Chapter September 2009 – May 2010

- Administered web site and facebook page
- Volunteered at E-Week activities

Awards & Grants:

Center for Global Change Student Research Grant May 2010

- Project title: "Determining Anisotropic Thermal Conductivity of Snow with Needle Probe Measurements"
- Awarded \$8200

3rd Place, 2010 Campus Research Day Undergraduate Symposium April 9th, 2010

- Project title: "Development and Benchmarking of Optical Touchscreen User Interface Technology"
- Awarded \$1000

Undergraduate Research Grant October 2009

- Project title: "Development and Benchmarking of Optical Touchscreen User Interface Technology"
- Awarded \$2250

Employment History:

Teaching assistant September 2010 – Present

UAF Mechanical Engineering Department, Fairbanks AK

Job duties include:

- Grading homework and designing quizzes for ES 346, Basic Thermodynamics
- Grading homework for ME/ENVE 458/658, Energy and the Environment
- Grading homework for ME 403, Machine Design
- Redesigning and conducting laboratory experiments for ME 415, Thermal Systems Lab

Research Assistant January 2010 – August 2010

UAF Institute of Northern Engineering, Fairbanks AK

Job duties include:

- Designing and running finite element models using COMSOL and MATLAB
- Analyzing geographical information using perl, python, MATLAB and C++

Office Assistant January 2008 – December 2009

UAF Mechanical Engineering Department, Fairbanks AK

Job duties include:

- Tracking purchase information on UAF's Oracle database and compiling it into a human-readable form
- Facilitating communication between students, faculty and system administration

Professor's Assistant September 2008 – December 2008

UAF Mechanical Engineering Department, Fairbanks AK

Job duties include:

- Grading and correcting homework assignments for ES 331, "Mechanics of Materials"

Painter May 2008 – August 2008

UAF Conference Services, Fairbanks AK

Job duties include:

- Patching, painting and wet-sanding walls, ceilings, doors and trim

Construction Laborer

May 2007 – June 2007

Panco Construction, Talkeetna AK

Job duties include:

- Sanding, polishing and assisting in the fabrication of solid surface
- Stocking, staging and assisting in the install of countertops other materials

Laboratory Assistant

February 2007 – May 2007

UAF Water and Environmental Research Center, Fairbanks AK

Job duties include:

- Taking inventory of chemical stock
- Tabulating, manipulating and organizing test data in Excel

Porter

May 2006 – August 2006

Aramark-Harrison Lodging, Denali National Park AK

Job duties include:

- Stocking; cleaning and maintaining public areas; and preparing rooms for guest arrival