

**STEPHEN KELLY**  
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## OBJECTIVE

Interesting projects in mathematical modelling and computational geometry.

## EDUCATION

Worcester Polytechnic Institute (WPI), Worcester, Massachusetts Est. May. 2016

### Bachelor of Science in Mathematical Sciences

**Related Coursework:** Numerical Methods, Vector and Tensor Calculus, Graph Theory, Mathematical Modeling with Differential Equations, Unified Robotics: Actuation, Unified Robotics: Sensing, Systems Programming, Statics

## RELATED PROJECTS

**Julia**, Contributor, [github.com/julialang](https://github.com/julialang) March 2014 - Present

- Contribute bugfixes and documentation to the core language and base library
- Maintain Meshes.jl package for 3D mesh loading, processing, and writing
- Submit fixes to packages for future compatibility based on Julia development

**TextCAD**, Open Source Independent Project, [github.com/textcad](https://github.com/textcad) July 2013 - Aug. 2013

- Developed methods for 3D model description using object serialization in Python
- Wrote a parser with extensive unit tests to convert JSON files of serialized objects to OpenSCAD
- Explored methods of programmed parametric mechanical design using objects and datasets
- Implemented the final concepts in a parametric 2D gantry system using an “H-Bot” configuration

**Test Fixture**, Open Source Internship Project, Ultimachine June 2013 - July 2013

- Developed the mechanics, software, and schematics for a test fixture to benchmark completed circuit boards
- Used sensors and software to determine the condition of each circuit board and log results to a database

## WORK EXPERIENCE

**Software Engineer**, Voxel8, Somerville, Massachusetts Aug. 2014 - May 2015

- Led the development of a path planner for 3D printing of thermoplastic and conductive paste
- Researched, implemented, and documented geometric algorithms for use in path planning
- Worked with electric teams to update and patch printer firmware

**Research Assistant**, Lewis Group, Harvard University, Massachusetts May 2014 - Aug. 2014

- Researched existing path planners and architectural pipelines for 3D printing
- Developed mesh slicing and polygon operation libraries
- Worked with researchers to develop path sequences for truss fabrication on 3D printers

**Fellow**, Advanced Manufacturing Research Institute, Rice University, Texas Aug. 2013

- Developed an open source toolchain for the inkjet printing of genetically modified bacteria
- Created appropriate firmware modifications to drive inkjet heads on a 3D printer
- Wrote path planning software for multiple inkjets in Python using OpenCV

**Intern**, Ultimachine, South Pittsburg, Tennessee Jan. 2013 - Aug. 2013

- Developed open source hardware testing solutions for internal manufacturing processes
- Created product documentation and corresponding procedures

**Intern**, Mill-Max Mfg., Oyster Bay, New York June 2012 - Aug. 2012

- Handled and organized customer data and engineering drawings
- Developed and implemented multi-material rapid prototyping systems for internal use

**Lab Assistant**, WPI Washburn Machine Shops, WPI Sept. 2011 - Oct. 2012

- Helped maintain the facilities by monitoring the labs and cleaning equipment
- Coordinated with Teaching Assistants to setup materials and machines for laboratory classes

**Associate**, Panera Bread, Hicksville, New York June 2010 - Nov. 2010

- Worked in a team to process guests' orders
- Maintained a fast paced work progression while completing secondary tasks

## SKILLS

<b>Computer Systems</b>	GNU/Linux (Fedora, Debian/Ubuntu, Android), Windows, MacOS X
<b>Office Software</b>	Microsoft Office(Word, Excel, PowerPoint), Libre Office, Google Drive
<b>Development Environments</b>	Git, Subversion, Eclipse, QT Creator, Arduino
<b>Mechanical Design Tools</b>	OpenSCAD, Auto/LibreCAD, SolidWorks, Fusion360
<b>Computer Languages</b>	Julia, Python, C, C++, Javascript, L <sup>A</sup> T <sub>E</sub> X
<b>Certifications</b>	Technician FCC License (KD2CCA)
<b>Languages</b>	English (Native), Spanish (Conversant)