

# Harrison Totty

DEVOPS ENGINEER · SOFTWARE PROGRAMMER

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## Summary

Current lead DevOps Engineer for the various Wolfram Cloud environments. Extensive software development experience since a very early age. Almost entirely self-taught and quick to learn new technologies. Hyperlinked GitHub repositories are prefixed with .

## Work Experience

### Wolfram Research, Inc.

Champaign, IL

#### DEVOPS ENGINEER

Apr 2018 - Present

- Architected Kubernetes clusters and supporting deployment pipelines.
- Developed/Implemented configuration management and remote execution frameworks.
- Personally architected software platforms, individual servers, machine clusters, and deployment workflows.
- Provided routine performance and security analysis.

#### WEB SYSTEMS ADMINISTRATOR

Dec 2016 - Apr 2018

- Provided general systems administration for various Wolfram web products and services.
- Designed & built DEV/TEST environments for Wolfram Cloud.
- Developed backend code for the Wolfram Cloud Platform in Java.

#### WEB SYSTEMS INTERN

Sep 2016 - Dec 2016

- Developed systems utilities to aid common operations tasks.
- Implemented new Wolfram kernel features in C.
- Ported many internal components to containerized environments.


## Sample Projects

### Web Systems Infrastructure Rearchitecture

Wolfram Research, Inc.

#### A PROJECT TO MODERNIZE ALL ON-PREMESIS USER-FACING INFRASTRUCTURE

Mar 2020 -

- Leveraged Cobbler for systems provisioning and Puppet for configuration management.
- Targeted CentOS 8.2 (up from CentOS 6.8 and 5.5) for new machines, while still integrating with older environments.
- Implemented infrastructure-as-code standards.
- Developed more than  20 Puppet modules, each with a high degree of parameterization.

#### prov

Wolfram Research, Inc.

#### A PYTHON SCRIPT TO MODIFY COBBLER ITEM SPECIFICATIONS IN A TERRAFORM-LIKE DECLARATIVE WAY

Mar 2020 - May 2020

- Leverages Cobbler's XMLRPC API to synchronize YAML-based item specifications.
- Shows Terraform-like client-server differences prior or during application.
- Supports backwards-compatibility with Cobbler servers older than version 3.
- Synchronizes data items (such as profiles and systems) as well as files (such as snippets).

### Personal Finance Analytics Platform

Personal Project

#### A PYTHON LIBRARY FOR CATEGORIZING AND ANALYZING BANK TRANSACTIONS

Mar 2020 -

- Categorizes transactions based on a home-made library of regular expressions.
- Leverages sklearn to perform predictive regression on financial trends.
- Provides a wrapper around plotly for graphical analysis.

#### tmpl

Personal Project

#### A GENERAL-PURPOSE TEMPLATING SYSTEM

May 2019 - Jun 2019

- A general-purpose Jinja2/YAML templating system based on "mkconf" and "mkdot".
- Utilized in the generation of this CV/Resume.
- Supports runtime-loaded Python extensions to the templating system.
- Capable of handling raw Jinja2 content piped directly to STDIN.

## Education

### Tallahassee Community College

Tallahassee, FL

#### ASSOCIATES OF SCIENCE

Jan 2015 - Jan 2016

- Graduated honors with 4.0 GPA.