Zach Ploskey

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Skills

Languages: JavaScript, Python, PHP, HTML, CSS, ReasonML, OCaml, SQL, Bash

Tools/Libraries: Linux, Git, MySQL, Node.js, BuckleScript, ReasonReact, React, NPM, SciPy, Cython, Docker, CodeIgniter, Omeka, Webpack, Travis, SVN, LaTex

Other: API design, continuous integration, strong technical writing and communication, teaching.

Projects

Personal Website (2018)

My personal website created in ReasonML and compiled to JavaScript. Built with BuckleScript, React, and Webpack.

bs-puppeteer (2017–Present)

BuckleScript bindings to Puppeteer written in ReasonML. Test suite uses jest (bs-jest) on TravisCI.

Mapping Northlake (2018) – https://northlakeunionhistory.com

Omeka site featuring digital exhibits about the history of Seattle's north Lake Union and interactive map using Neatline. Composed of the following subprojects:

NeatlineCoverImage: Neatline plugin to add functionality to the Neatline admin interface allowing the site admin to set any Omeka item image as a cover image/thumbnail for a Neatline Exhibit. Written in Backbone.js using Rivets and Underscore.js.

plugin-MappingNorthlake: Omeka Plugin to configure sorting throughout the site.

theme-mappingnorthlake: Custom site CSS and HTML/PHP template overrides.

Experimental Beijing (2015–2018) – http://experimentalbeijing.com

Digital media archive of Chinese art works and information about them. This is a bi-lingual site in English and Chinese. Uses PHP (Zend Framework) and jQuery and is based on the Omeka digital museum collection platform, and is composed of a number of plugins and a custom CSS theme. I created support for language switching in Omeka which allows the user to toggle the language on any page. This feature has since been upstreamed in the Omeka Multilanguage plugin. Composed of the following subprojects:

ElementLinks: Plugin to dynamically create links to other pages for items which contain matching text in different fields.

ShortcodeCarousel: Plugin forked from the Omeka project, this adds support for use of AdminImages-uploaded images in the carousel displayed on the front page.

plugin-ExperimentalBeijing: Plugin to override some UI defaults, customize sorting, load translation files, filter out content in the other language, add routes, provide additional translation features, fetch additional data for certain pages, and add translated text to the search text corpus used in site searches.

omeka-theme-experimental-beijing: Custom CSS (using SASS) and JavaScript to customize the site appearance, override Omeka default HTML/PHP templates, toggle expandable data sections, and override default image carousel behavior.

Cosmogenic (2010–2015)

Scientific Python library which can be used to model the production and radioactive decay of rare isotopes (known as cosmogenic nuclides) that are produced by cosmic rays interacting with rock or sediment at the earth's surface. Developed for and used extensively in my work in graduate school. Uses SciPy and NumPy libraries. Rewrote computationally intensive

parts of calculations for isotope production from muons in Cython to achieve massive (∼50x) speedups in runtime over the Python version. Created a Python implementation of the Neighborhood Algorithm sampler which uses Bayesian statics to estimate a probability distribution for model parameters, which I used it in my research to infer landscape evolution history from cosmogenic nuclide depth profiles. It produces attractive graphs using MatPlotLib, includes some speed benchmarks, and runs its test suite with continuous integration on TravisCI. Documentation is generated using Sphinx.

Employment

Ploskey Technical

Software Engineer/Owner, June 2015–Present

Work with businesses and researchers to build custom software solutions, including web applications and data collections and processing tools. Develop and maintain custom software using technologies like PHP, Omeka, Javascript, Node.js, Python and MySQL. Write web scraping scripts with Puppeteer/bs-puppeteer (previously used PhantomJS). Clients include the University of Washington and UMASS Amherst.

University of Washington

Graduate Research/Teaching Assistant, Earth and Space Sciences, August 2009–August 2016

Developed Cosmogenic, an open-source Python library for simulation of cosmogenic isotope production during landscape evolution and statistical inference from cosmogenic nuclide data. Ported the CRONUS Calculator from MATLAB/Matlab Web Server to Octave CGI. Taught lab sections, including programming for geoscientists. Awarded a Geological Society of America Graduate Student Research Grant (2010).

Research Assistant, Cosmogenic Nuclide Laboratory, Summer 2008–Summer 2009.

Improved and replaced some existing PHP scripts for getting data into the lab MySQL database. Redesigned and normalized the database tables. Rewrote the PHP back-end using using the CodeIgniter MVC framework. Added new data entry forms, input sanitization, error handling and autocompletion. Integrated the web application with the CRONUS Calculator. This work was eventually released as open source software called Cosmolab ChemDB. Chemically prepared rock samples for isotopic measurements.

Computer Support Technician, School of Oceanography, February 2007–October 2008.

Managed web, email, and backup servers running Linux and Windows Server. Provided computer and technical support.

Pacific Northwest National Laboratory

Technical Intern, Marine Sciences Laboratory (Portland, OR), Summer 2006.

Data entry, processing and visualization. Developed data processing software in C#.NET.

Education

PhD Student, Earth and Space Sciences, University of Washington, 2009–2016.

BS, Earth and Space Sciences, *with Distinction*, University of Washington, 2009.

BA, Anthropology, University of Washington, 2009.

Community

Organizer of Seattle ReasonML/OCaml Meetup.

Contributor to many open source projects in the ReasonML and OCaml ecosystem.

Last updated: October 7, 2018