Erik Alfvin

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EDUCATION

UNIVERSITY OF MINNESOTA
FULL STACK DEVELOPMENT BOOTCAMP,
IN PROGRESS

Full-stack JavaScript development. Curriculum includes Node.js, React.js, MySQL, jQuery, Express.js. Working in Agile teams to complete large projects.

MACALESTER COLLEGE
BACHELOR OF ARTS, 2015

Graduated cum laude, May 2015. Major: Physics. Concentration: Astronomy. Minor: Mathematics. Physics tutor, 2013.

PROFESSIONAL EXPERIENCE

MINNESOTA DEPARTMENT OF COMMERCE - WEIGHTS & MEASURES DIVISION
TECHNICAL MANAGER, OCTOBER 2015 - PRESENT

- Responsible for the technical accuracy of results produced by the State of Minnesota Metrology Lab for our customers.
- Responsible for leading statistical analysis and data collection projects to verify the accuracy and precision of results.
- Develop Python code to assist in data analysis.
- Completed four additional weeks of courses at the National Institute of Standards and Technology that advanced my skills for the job.
- Co-taught a course at the 2019 National Metrology Conference.

UNIVERSITY OF MINNESOTA, MACALESTER COLLEGE
ASTROPHYSICAL RESEARCH ASSISTANT, 2013 - 2015

- Conducted astrophysics research over three summers.
- Wrote software in Python to process data from the Hubble Space Telescope.
- Leveraged Python, IDL and shell scripts to cross-match sources between data sets and analyze final results.
- Presented research at American Astronomical Society meetings and at the Undergrad ALFALFA Team Workshop at the Aerocibo Telescope, Puerto Rico.
- Co-authored a paper published in *The Astrophysical Journal.*

TECHNICAL SKILLS

LANGUAGES AND FRAMEWORKS
Python3 · Kivy · JavaScript · Node.js · HTML5 · CSS

OTHER SKILLS
Git · Data analysis · Statistics · Visual Studio Code · Written and oral presentations · Teaching

TECHNICAL PROJECTS

WEATHER DASHBOARD
FEBRUARY 2020 | github.io/Weather-Dashboard

- Created a web application that displays the current and forecasted weather conditions for a given location.
- Retrieves data from the OpenWeather API and saves users' recent searches.

SATELLITE ORBIT SIMULATOR
DECEMBER 2019 | github.io/Orbit-Simulator

- Developed a JavaScript web application that simulates and animates a scaled orbit of a satellite around the Earth based on initial conditions put in by the user.
- The user can interact with the satellite mid-simulation to change its orbit.
- The application provides a fun and interactive way for people to learn about orbital mechanics.

PYMAC SOFTWARE
NOVEMBER 2019

- Developed data reduction software in Python to process precision measurement data.
- Implemented an object-oriented approach - data are stored in objects, manipulated, and then passed between objects.
- Currently learning Kivy, a Python UI framework, and developing a graphical front end following a MVC design.
- Building an interactive text editor with basic linting features.