

MICHAEL A. GREEN *Software Developer, R&D Scientist* | 509-596-9600

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Experience

Crunch Cloud Analytics

Software Developer | *Aug 2020-Present* | Remote

- Developed RESTful APIs for triggering ETL events and web requests in Python atop the CherryPy microframework.
- Built and Managed ETL pipelines between Crunch backend services hosted on AWS, and third party REST and SOAP APIs.
- Wrote C extensions for performance-critical library modules and file parsers.
- Created a memory-efficient, lazy iterable parquet exporter designed to write terabyte-scale parquet files.
- Green-fielded event-driven microservices built on Amazon SQS message queues.
- Worked with data stores built around mongoDB, crunchDB, and parquet datalakes.
- Maintained and enhanced containerized services built on docker.
- Wrote unit, component, integration, and end-to-end tests for TDD via pytest.
- Used git for version control, including writing git hooks to trigger commit preprocessing, linting, and code formatting.
- Configured CI/CD pipelines built atop Jenkins and Github Actions.

University of Missouri–Kansas City

Visiting Scholar | *June 2020 – Current* | Remote

- Built a distributed compute engine for automatically scheduling and executing research analytics jobs.
- Generated a suite of microservices for executing tasks defined by JSON contracts communicated across service boundaries via Redis stores and queues.
- Constructed a coordination model around the microservices to handle asynchronous task processing.
- Created a series of SPAs in Svelte for serving tasks to the backend compute engine via web clients.

Graduate Research Assistant | *Aug 2016-June 2020* | Kansas City, MO

- Built Python modules to accurately analyze, simulate, and predict nanomaterials performance through numerical methods and machine learning.
- Built custom C and C++ extensions to increase the computational speed of Python modules.
- Maintained PostgreSQL/SQLite databases for data storage, interfaced via SQL and SQLAlchemy.
- Synthesized micro- and nanoscale materials for application in light/matter interactions, focusing on GHz range return loss technology and photocatalysis.
- Assumed a leadership role in managing/training R&D teams over the summer semesters.
- Presented research talks at both regional and national American Chemical Society conferences.
- Published 24 research manuscripts, 14 as first-author.

Open Source Software

libRL – A python library for the characterization of Microwave Absorption

libRL is a Python implementation with C++ extensions which allows users to automate characterization techniques found in the research literature for radar-absorbing materials. *Published in J. Open Source Software*

Skills

Python, C, Go, JavaScript, Svelte, SQL; numpy, pandas, scipy, pyarrow, Apache parquet, fastparquet, cherrypy, flask, sklearn; mongoDB, SQLite, PostgreSQL, SQLAlchemy; AWS, GCP; git, docker, docker-compose, jenkins, github actions

Education

PhD, Chemistry, University of Missouri–Kansas City, 2020

MS, Chemistry, University of Missouri–Kansas City, 2019

BS, Chemistry, Minor of Mathematics, University of Idaho, 2016