

# Alexander Larsen

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## TECHNICAL SKILLS

### Multi-purpose Language

- *Python*
- *R*
- *C++*
- *JavaScript*
- *Bash*

### Sublanguages

- *SQL*
- *MongoDB*
- *CSS / HTML*

### System / Support

- *Git*
- *AWS CLI*
- *REST API*
- *Docker*
- *GIMP*

## EXPERIENCE

### Clinical Bioinformatician II

*Aperiomics Inc.*

**June 2018 – Current**

*Sterling, VA*

#### *Projects*

- Designed automated COVID-19 report end to end software using.
- Developed metagenomic analysis library that automatically pulls, graphs, and models metadata.
- Designed automated multi-process Human Microbiome Project Whole Genome Sequencing (WGS) metagenomic pipeline.
- Created rapid primer design tool for over 10,000 different microscopic genome's unique K-mers.
- Presented on bioinformatics clinical value to congress representative and at other local events.
- Scientific article on Interstitial Cystitis with first authorship (submitted).

#### *General*

- Pipeline software development and module creation using Python, SQL, command-line/bash, C++, HTML, CSS, Javascript, and R.
- NGS protocols optimization, data analysis. Statistical modeling, Bayesian, Regression, PCoA, diversity analysis.
- Public speaking, clinician consults, and patient customer service.
- Publication writing, SOP writing, and publication grade visualizations.

### Undergraduate Researcher

*University of Wisconsin Madison*

**Apr 2013 – May 2016**

*Madison, WI*

- Characterizing circadian rhythm genes and their temporal effect on long term memory formation in drosophila. Particular effort towards the quality control of data and samples.
- Characterizing zebrafish embryonic development, crayfish nerve reading frequencies, and rat hippocampal electrical activity.

## EDUCATION / CERTIFICATIONS

### Bioinformatics M.S.

*University of Maryland Global Campus*

**Mar 2019 – Nov 2021**

*Adelphi, MD*

- Proteins and DNA: Alignment, Statistical Analysis, Databases and Structure. BIF001x - BIF003x

### Bioinformatics

*Audited – UW Madison / MIT Open Courseware*

**June 2017 – Apr 2018**

*De Pere, WI*

- Graduate studies following UW Madison outlines for a master's in bioinformatics.
- Statistics, bioinformatic algorithms I/II, general algorithms / data structures, artificial intelligence.

### Neurobiology B.S.

*University of Wisconsin Madison*

**Sept 2012 – May 2016**

*Madison, WI*

- Graduated from a selective honors biology program which facilitated group directed research, scientific writing, and analysis. – UW Madison Biocore program.