

# Edmund A. Miller

COMPUTATIONAL BIOLOGIST · SOFTWARE DEVELOPER

☎ 214-532-3452 | ✉ [edmund.a.miller@protonmail.com](mailto:edmund.a.miller@protonmail.com) | 🏠 [edmundmiller.dev](https://edmundmiller.dev) | 📺 [emiller88](#) | 🎮 [emiller88](#)

## Experience

### Functional Genomics Lab(Prof. Tae Hoon Kim)

Richardson, Texas

RESEARCHER

Jul 2015 - PRESENT

- Created a pipeline to reproduce and create new nascent RNA predictions using Snakemake.
- Mentored undergraduates in rewriting nascent RNA pipeline following nf-core standards
- Used techniques such as containers, conda environments, and high-performance computing clusters.
- Performed RNA isolation from cells that were treated with LPS-particles and used qPCR to quantify eRNA transcript levels.

### Element Biosciences

San Diego, California (Remote)

BIOINFORMATICS ENGINEERING ASSOCIATE

Aug 2021 - PRESENT

- Maintaining internal pipelines and secondary analysis

### Element Biosciences

San Diego, California (Remote)

BIOINFORMATICS ENGINEERING INTERN

June 2021 - Aug 2021

- Converted Internal Whole Genome Sequencing Pipeline from Jupyter and bash scripts to nextflow.
- Performed variant calling for COVID-19 samples.
- Processed 10x spatial transcriptomics data.
- Created internal standards for nextflow modules, multiqc, and pipeline testing.
- Analyzed ERCC spike-in data.

### Olypsis Technologies

Dallas, Texas (Remote)

BLOCKCHAIN SOFTWARE DEVELOPER

May 2018 - May 2020

- Lead development and design of completing tasks including, creating a functioning test suite for legacy code, containerizing the entire system, designing and implementing a REST API and Smart contracts for the system.
- Created a novel ERC20 payment splitter Smart contract in Solidity for Digital Assets Foundry.
- Developed the DAWN protocol to transfer files in a peer to peer fashion, that is decentralized and does not rely on a 3rd party to be trusted using Whisper, IPFS, AES256, and React.

## Skills

**Tools** Nextflow, Nix/OS, Snakemake, Conda, Slurm

**Programming** Python, Node.js, Rust, R, Solidity, Bash/ZSH, Clojure

**DevOps** Docker, GitHub Actions, AWS, GitLab-CI, Kubernetes

**Front-end** React, Vue, Nextjs, Gatsby, Redux, Hugo, HTML5, CSS

## Education

### University of Texas at Dallas

Richardson, Texas

PH.D. IN MOLECULAR AND CELL BIOLOGY

Aug 2020 - PRESENT

- Fall 2021 - TA for Genes to Genomes
- Summer 2021 - Co-created Course material and TA for Applied Genomics
- Fall 2020 - Spring 2021 - TA for Biochemistry I

### University of Texas at Dallas

Richardson, Texas

M.S. IN BIOTECHNOLOGY

Aug 2018 - Dec 2019

- Fast-Track Program

### University of Texas at Dallas

Richardson, Texas

B.S. IN MOLECULAR BIOLOGY

Aug 2015 - Aug. 2018

- Academic Excellence Scholarship 2015-2019
- President's Scholarship 2016-2017
- Continuing Student Scholarship 2017-2018

# Projects

---

## mlf-core

CORE

- Deterministic machine learning project templates based on MLflow.

*Preprint*

*Jan 2021 - PRESENT*

## nf-core

MODULES TEAM

- Maintaining nf-core/nascent
- Lead Creation of unit and e2e tests and CI refactoring for DSL2 Modules.

*GitHub Page*

*Mar 2020 - PRESENT*

## Doom-Emacs

CONTRIBUTOR

- Worked on Reference, Conda, and Solidity modules.
- Maintaining several personal modules such as Snakemake and LSP language support.

*GitHub*

*Mar 2018 - PRESENT*

## edgePy

CONTRIBUTOR

- A Python implementation of edgeR for differential expression analysis.
- Implementing code and testing standards to the repo.

*GitHub*

*Sep 2018 - PRESENT*

## emacs-jest

MAINTAINER

- A package to run Jest testing inside of emacs with a magit popup.

*GitHub*

*Dec 2018 - PRESENT*