

# Edmund A. Miller

COMPUTATIONAL BIOLOGIST · SOFTWARE DEVELOPER

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## Experience

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

Richardson, Texas

RESEARCHER

Jul 2015 - PRESENT

- Created a pipeline to reproduce and create new nacent RNA predictions using Snakemake.
- Mentored undergraduates in rewriting nacent RNA pipeline following nf-core standards
- Used techniques such as containers, conda environments, and high-performance computing clusters.
- Created various resources for the lab such as JupyterHub and the organization of the lab's documentation.
- Performed RNA isolation from cells that were treated with LPS-particles and used qPCR to quantify eRNA transcript levels.

### Element Biosciences

San Diego, California

BIOINFORMATICS ENGINEERING INTERN

Jul 2015 - PRESENT

- 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.

### Olypsis Technologies

Dallas, Texas

BLOCKCHAIN SOFTWARE DEVELOPER

May 2018 - May 2020

- Lead developement 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 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

Preprint

CORE

Jan 2021 - PRESENT

- Deterministic machine learning project templates based on MLflow.

### nf-core

GitHub Page

MODULES TEAM

Mar 2020 - PRESENT

- Lead Creation of unit and e2e tests and CI refactoring for DSL2 Modules.