# Siddharth **Reed**

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## Education

### Master of Science - Computational Biology

CARNEGIE MELLON UNIVERSITY *Sep. 2020 - Apr. 2022*

- Relevant Coursework: Algorithms, Statistics, Programming, Machine Learning, Genomics

### Honours Bachelor of Science - Molecular Biology & Genetics Co-op

MCMASTER UNIVERSITY *Sep. 2015 - Apr. 2020*

- Relevant Coursework: Software Development, Mathematical Modelling, Bioinformatics, Microbial & Human Genetics

## Experience

### Hoffman Lab, University Of Toronto

*May 2019 - Aug. 2019*

RESEARCH ASSISTANT CO-OP (LAB SITE)

- Comparing transcriptomic data between publicly available placental, cancer and "normal" tissues
- Extensively cleaning and pre-processing data in a clear, reproducible manner
- Self-taught and applied linear models to differential expression analysis and correcting with batch effects
- Creating clear intuitive visuals to help communicate trends and patterns in biological data

### Adapsyn, McMaster University

*Jan. 2018 - Aug. 2018*

DATA SCIENCE CO-OP (GITHUB)

- Preformed various analyses with many kinds of biological data to accelerate natural products discovery
- Applied statistics and statistical learning techniques to help direct chemists in natural products discovery
- Communicated effectively with wet lab scientists to address problems from a computational perspective
- Became adept at working under constant deadlines and effectively multitasking

### Golding Lab, McMaster University

*Sep. 2018 - Apr. 2019*

UNDERGRADUATE THESIS STUDENT (GITHUB)

- Investigated the relationship between horizontal gene transfer rates and CRISPR-Cas systems using novel techniques
- Built and end-to-end pipeline to download, process, analyze and visualize public genomic data
- Applied methods in network theory and statistics to reach conclusions about biological phenomena
- Presented my work in a clear, engaging way as both a final presentation and manuscript

## Extracurriculars

### SELEXzyme: Generating DNAzymes with a Genetic Algorithm

PERSONAL PROJECT (GITHUB) *Sep. 2020 - Dec. 2020*

- Implemented a genetic algorithm and training an SVM model to simulate SELEX sequence optimization *in silico*
- Developed a simple, organized, well-documented codebase using Go and python
- Wrote a detailed README explaining implementation details and choices, usage details and a video demo
- Empirically validated my program results on real world data and writing a summary report

### Configuration Files and Scripts

PERSONAL PROJECT (GITHUB) *Mar. 2018 - Present*

- Wrote concise, robust, readable bash scripts for personal utilities
- Tested individual scripts and their interactions to ensure proper functionality

### Frontier College

VOLUNTEER TUTOR *Sep. 2015 - Apr. 2017*

- Tutoring for for high school students, mostly involving math and biology
- Going over concepts thoroughly, helping student understand difficult concepts

## Skills

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| **Programming** | Proficient: Python, Bash, Vim, Git, LaTeX, R |
| | Familiar: Rest API, Go, Matlab, Perl, Java, Cluster Computing (slurm, sungrid) |
| **Research** | Literature Review, Data Mining, Data Analysis, Data Visualization, Experimental Design, Scientific Writing |
| **Languages** | English, French |