John Calvin Morrison
215-429-9384 | jcm357@drexel.edu | mutantturkey.com

WORK EXPERIENCE

Scientific Programmer - Bioinformatics research tools @ Drexel. (January 2013 - Present)
- PyFeast, a feature selection toolkit wrapper in Python.
- Fizzy, metogenomic feature selection based on PyFeast, and intregrated into QIIME
- Pogo-DB, a fully fledged interactive web database for querying gene similarity between species
- dna-utils, high-performance DNA parsing and primer strand counting.
- SelectiveWholeGenomeAmplification, automated primer design based on brute force sweeps and paramter filtration of specific DNA primers for use in real world samples.
- Quikr, a taxonomic classifier using compressive sensing in C and OpenMP
- Web Queuing system for in-house classification software, written in web2py, for use with quikr

Computer Vision Programmer - Automated Fly Video Tracking and Analysis @ Drexel C.S. (May - Dec 2012)
- Developed high throughput tools in C, using ImageMagick, OpenCV and OpenMP for tracking fruit fly learning and memory tracking.
- Benchmarked tools and formalized software review, and improved performance to make product viable for scientists to use
- experience with color normalization, blob detection, and motion tracking
- scripting for automated processing and modified tools for parallelization across a cluster.
- currently in use at The Maranda Lab at Drexel.

Web Developer – The Math Images Project @ Goodwin College / Drexel CS (June 2011 - January 2013)
- Web Developer - The Math Images Project, Drupal, PHP, HTML5
- Maintained Mediawiki software / Prototyped a replacement for Mediawiki in Drupal
- Developed HTML5/Javascriot applets and Java applets

CV

S. D. Essinger, E. Reichenberger, C. Morrison, C. B. Blackwood, G. L. Rosen
"A Toolkit for ARB to Integrate Custom Databases and Externally built Phylogenies"
PLOS One (Accepted) 2014

G. Ditzler, J. Calvin Morrison, and G. Rosen.
"FizzyQIIME: Feature Selection for Metagenomics"
Genomic Science Annual Contractor-Grantee Meeting 2014

Yemin Lan, J. Calvin Morrison, Ruth Hershberg, and Gail L. Rosen.
"POGO-DB" - a database of pairwise-comparisons of genomes and conserved orthologous genes."
Nucleic Acids Research, 2013. http://pogo.ece.drexel.edu

Reza MA, Mhatre SD, Morrison J. Calvin, Utreja S, Saunders AJ, Breen David E., Marenda Dan.
"Automated analysis of courtship suppression learning and memory in Drosophila melanogaster."
Fly 2013; 7:105 - 111;

SKILLS

Platforms – Mac OS X, Unix, GNU/Linux (Red Hat, Suse, Ubuntu, Arch)

Languages – C, Bash, XML, HTML, PHP5, Javascript, Python, Matlab

Software – Linux System Administration, MySQL, Drupal, Mediawiki, Bugzilla, Nagios, LDAP, QIIME, BLAST2

Research Interests - Computer Vision, Bioinformatics, Biological Modeling, Machine Learning, High Performance Computing, Real time video tracking.