

KATHERINE C.H. AMRINE

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SKILLS

- Languages: Proficient in R, Perl, MySQL, Python, experience in C++, Java
- Tools: UNIX/ Linux OS, openCV, Flask, pandas, numpy, BioPerl, Weka

EXPERIENCE

Fellow at Insight Data Science (Fall '15)

- Built “kittyTwin”, a web application to pair cat adopters with locally adoptable cats with similar facial features (www.kittyTwin.me)
- Orchestrated automated daily updates including data collection on remote machines to integrate data from the Petfinder.com API into **postgreSQL**, and **openCV**
- Designed a simple user interface in **Flask** to upload a photo and return information on adopting a specific cat built on Haar cascade facial feature detection and Eigenface computations

Postdoctoral Researcher at UC Davis, Davis CA (September '13 – Present)

- Performed network analyses of large biological datasets (microarray and *RNAseq* data) in **R** to glean information about generalized disease response in plants
- Led/collaborated on projects extracting signal of gene expression in grapevines and their pathogens during infection.
- Published work in peer-reviewed journals

Graduate Student at UC Merced, Merced, CA (August '08 – September '13)

- Implemented Information theory for processing genetic signal in bacterial genomes containing high levels of bias that currently confound classic phylogenetic methods in **Perl** and **Python**
- Developed novel **machine learning** classifiers to group genomes with Random Forests, Support Vector Machines, Multilayer Perceptrons, implemented in Weka (**Java**) to shed light on the origin of mitochondria
- Co-developed FAST: free, open-source BioPerl-based tools to process biological sequence data
- Presented research orally and by poster at various conferences (domestic and international) and published work in peer reviewed journals
- Designed and taught lectures in absence of instructor in topics including Machine Learning, Dynamic Programming, Calculus, Bioinformatics, and Scientific Data Analysis

Undergraduate researcher at University of Wyoming, Laramie WY (January '06 – May '08)

- Conducted collaborative research while independently learning effective research tools (**unix environment, dynamic programming**) in computational biology and molecular evolution
- Obtained competitive REU at Iowa State University (Sum '07)
- Published work in peer reviewed journals

EDUCATION

University of California, Merced -- Merced, CA

Ph.D., Quantitative and Systems Biology, August '13

- Selected Honors/Awards: Graduate Research Council Fellowship, Sum. '11, Sum. '12; Outstanding Graduate student, Spr '09; Service to Leadership Award, Spr '10; Legacy Award, Spr '13
- Notable leadership: Graduate Student Association (GSA) President '09-'11, GSA Secretary '12-'13

University of Wyoming -- Laramie, WY

B.S. Molecular Biology, May '08, B.S. Mathematics, May '08

- Selected Honors/Awards: Theodor Hanekamp Memorial Scholarship, Fall '06, Wyoming NSF EPSCoR Fellowship, Sum. '06

References available upon request