Kevin Yang
48 North Catalina Ave Apt 12, Pasadena, CA 91106 | yangkky@gmail.com | (614) 260-9454

QUALIFICATIONS

- 2+ years in scientific computing in Python, including NumPy, SciPy, Pandas, and scikit-learn
- 8+ years scientific computing in Matlab
- Molecular cloning and expression, including cell culture, DNA/protein extraction and purification, gel electrophoresis, interpreting sequencing data
- Statistical analysis and machine learning
- Software development, including the Unix command line and version control using git/Github

PUBLICATIONS AND PRESENTATIONS

- Bedbrook, C. N., **Yang, K. K.**, Rice, A. J., Gradinaru, V., Arnold, F.H. (2017). "Machine learning to predict eukaryotic expression and plasma membrane localization of engineered integral membrane proteins." In preparation.
- Bedbrook, C. N., Rice, A. J., **Yang, K. K.**, Ding, X., Chen, S., LeProust, E. M., Gradinaru, V., Arnold, F.H. (2017). Structure-guided SCHEMA recombination generates diverse chimeric channelrhodopsins. *PNAS.* In press.
- **Presenter**. "Using Gaussian process models to predict channelrhodopsin plasma membrane localization" Southern California Machine Learning Symposium. 18 Nov 2016, Pasadena, CA

EDUCATION

California Institute of Technology, Pasadena, California (August 2014 – present)
PhD candidate in Chemical Engineering
Relevant coursework: Introduction to Biomolecular Engineering; Machine Learning and Data Mining; Linear Algebra; Bioinformatics; Data Analysis for the Biological Sciences

The Ohio State University, Columbus, Ohio (Sept 2007 – June 2011)
Degree: B.S. in Chemical and Biomolecular Engineering; minor in Music

EXPERIENCE

Graduate Research Assistant, Professor Frances Arnold's Group
California Institute of Technology, Pasadena, CA (August 2014 - Present)
- Use machine learning (Gaussian processes) to predict and optimize the properties of algal channelrhodopsins for optogenetic applications in mammalian cells
- Clean and process protein and DNA sequence data
- Design and build recombination libraries of proteins
- Clone, transfect/transform, and express proteins in mammalian and bacterial systems
- Design and implement fluorescent or HPLC screens for directed evolution

Graduate Teaching Assistant
California Institute of Technology, Pasadena, CA
Undergraduate kinetics (January – March 2016)
- Wrote and graded homework assignments and exams
- Planned and delivered two review lectures

Introduction to Biomolecular Engineering (September – December 2016)
- Wrote and graded all homework assignments
- Provided feedback to students as they wrote a proposal and a *Nature*-style News and Views article
- Prepared and delivered lecture on machine learning for protein engineering
- Overall rating of Excellent (highest rating) on Teaching Quality Feedback Report

Physics and Math Teacher
Animo Inglewood Charter High School, Inglewood, CA (August 2011 – August 2014)
- Developed and implemented a novel curriculum for 9th grade Physics and math
- Collaborated with educators across grade levels and subjects at a low-income, high-need school
- Founded and coached FIRST Robotics Team

<u>AWARDS AND ACHIEVEMENTS</u>
- Runner-up, Best Applications Poster, Southern California Machine Learning Symposium (2016)
- Caltech Biotechnology Leadership Program Trainee (2015 – present)
- Rosen Center Scholar Award (2016)
- NSF Research Experience for Educators (RET) scholarship (2013)
- NSF Graduate Research Fellowship (2011)