Erik Sanders Cheng

Cell: (510)459-9060 || Email: chenge@berkeley.edu || Linkedin: linkedin.com/erikscheng

Education

University of California, Berkeley
BS Chemistry (Expected May 2018)

- Relevant coursework: Stat 140, Math 110, CS 61AB, Data 8, Stat 133, Stat 88
- Other coursework: Chem 221A, Chem 120A, Physics 7ABC, Chem 112AB, Chem 104AB, Math 53/54

Experience

Nano Precision Medical May 2017-Present
Nanomaterials Intern

- Developed improved permeance model of nanoporous films, implemented in Python for application to data.
- Developed an automated process that allowed for batch curve fitting, identifying features of interest in noisy data and using sklearn and numpy to fit modeled curves to data for feature extraction.
- Designed and conducted experiments to determine effect of two step anodization on film characteristics.
- Characterized films with Wyko profilometry and various imaging tools, including skimage and ImageJ.
- Communicated results in multiple weekly meetings using Jupyter notebooks and matplotlib visualizations.

UC Berkeley EECS Department January 2017- May 2017
Course Tutor, Foundations of Data Science

- Explored and cleaned large data sets for instructional materials, deployed both as with LaTex and Jupyter.
- Added features to datascience, a custom Python package developed for teaching intro data science at Cal.
- Created documents and practice problems for students in topics of both programming and probability.
- Led weekly group tutoring sessions, as well as one-on-one sessions once or twice a week.

Rubik's Cube Club at Berkeley January 2015- Present
External Vice President

- Organize and instruct Math 98, a class about Rubik's cubes. Lead two small groups in weekly classes.
- Co-organized multiple official competitions of 200+guests; manage staff and logistics during events.
- Built a competition announcements page using HTML/CSS to provide updates to all competitors.

Sandia National Laboratories June 2016-August 2016
R&D Student Intern

- Improved methods for quantification of microscopic features. Reduced uncertainty by a factor of ~10.
- Worked on a semi-automated experiment procedure using Python to interface with equipment.
- Visualized effects of individual parameters in electrochemical processing for presentation to clients.

Saykally Group, UC Berkeley May 2015-Present
Undergraduate Research Assistant

- Studying the evaporation behavior of aqueous solutions using Raman thermometry techniques.
- Optimize data collection through active control of optical elements in Raman spectroscopy experiment.
- Determine quality of data by observation of Raman spectrum features and post analysis of data through processing in MATLAB and Igor, assessing results using theoretical cooling models.

Projects and Publications

Surprising Effects of Hydrochloric Acid on the Water Evaporation Coefficient Observed by Raman Thermometry - Rizzuto, A. M., Cheng, E. S., Lam, R. K., Saykally, R. J. J. Phys. Chem. C (2017)

Understanding Bias in Sampling Users with Twitter's Streaming API May 2017

- Independent study supervised by Prof. Deb Nolan in assessing sampling biases in Twitter's publicly available Streaming API, using automated queries from a full sample and applying permutation testing.

2016 Presidential Election Case Study November 2017 – December 2017

- An investigation of the relative predictive power of various features found in Census and historical election datasets, merging from several file formats with dirty data and applying multiple classification techniques.

Skills

- **Proficient**: Python, R, Java
- **Familiar**: XML, SQL, HTML, CSS, Scheme
- **Tools:** Jupyter, git/Github, bash, ssh/ftp
- Electrochemistry, Materials Chemistry
- Image, signal, text processing
- Data cleaning and visualization