Feng YAN

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EDUCATION BACKGROUND

The Ohio State University, *Columbus, USA* August 2018 – December 2021
Bachelor of Science: Major in **Applied Mathematics**, Minor in **Chemistry** Overall GPA: 3.87/4.0
Relevent Coursework: Linear algebra, Calculus, Real analysis, Complex analysis, Probability theory, ODE, PDE
Honors: ▸ **Dean's List for continuous 6 semesters from 2018 to 2021 Academic Year**

INTERNSHIP EXPERIENCES

***Intern*, Zhejiang Academy of Science&Technology for Inspection&Quarantine**, *Hangzhou, China* May 2020–July 2020

- Interned in the Pesticide Residue Detection Department, in charge of the detection of pesticide and veterinary drug residues in different foods, for example, trans-fatty acids, procymidone, sodium cyclamate, carbosulfan, etc.
- Finished assigned experiment tasks using the methods required by FDA, analyzed experimental data by LCMS/GCMS and wrote experimental reports, made summaries and did regular report to supervisor.
- Analyzed different methods required by FDA, compared the pros and cons, and developed more effective and concise method.

RESEARCH & PROJECT EXPERIENCES

Kopec lab: Untargeted LC-MS Metabolomic Profiling of Plasma from the Multinutrients for ADHD Youth Trial
Instructor: Dr. Rachel Kopec December 2020-July 2021

- Designed the experiment that serves vitamins to one group and placebo to the other, collected metabolites data, used QCRSC and VDK to correct normalized and log transformed data, analyzed PCA models to select the best data frame.
- Used caret and other packages in R, built random forest model using selected data frame, and delivered a presentation in group to see how different metabolites behave to indicate if taking vitamin helps to improve the health status.
- Compared random forest model to other models like PCA and linear models, and analyzed its pros and cons.

MATLAB Coding Development to Solve Mathematical Problems January 2021-April 2021
Instructor: Dr. Tae Eun Kim

- Created functions of SVD, used this function and MATLAB code to create geometric interpretation of SVD.
- Used MATLAB code and formulas to find out that Newton's method converges faster than quadratic, and proved that it is also the most effective way.
- Created MATLAB code to draw spiral polygon, with sides from 5 to 8.

Java Coding Development and Application in Real World August 2020-December 2020
Instructor: Dr. William E. Devanny

- Created trajectory model to better calculate velocity and displacement.
- Analyzed population increase and decrease in Ohio area by creating data table in Java, and calculated the birth rate or death rate to reach the population balance.
- Created a mechanism in Java to encode and decode the cipher, and created a "guess word" game.

Virtual-Reality Demonstrations in Buckeye VR Feburary 2019- April 2019
Instructor: Dr. Bart E. Snapp

- Used Buckeye VR and calculus to make intersecting planes, Spheres and circles, Torus and circles, and Mobius strip.
- Created donut shape demo to develop advanced skills in calculus understandings.

Inquiry into the Effectiveness of $Cs_3X_2Cl_9$ and $Cs_3Bi_2X_9$ As Solar Cells January 2019- April 2019
Instructor: Dr. Patrick M. Woodward

- Explored more possibilities of perovskite choice and explored higher efficiency of solar cells.
- Analyzed the solar efficiency of new perovskite $Cs_3X_2Cl_9$ (X=Sb,Bi) and $Cs_3Bi_2X_9$ (X=Cl,Br), modeled the synthesis of new material, found the trend to improve the solar cells efficiency, delivered a presentation to gather suggestions from professors, and tested the stability of two solar cells.

EXTRACURRICULAR ACTIVITIES

Badminton Club, OSU September 2018-present
Member

- Attended club meetings twice a week, communicated with other members and improved badminton skills.

CCCC (Chinese Culture & Conversation Club), OSU September 2018-present
Member

- Attended club meetings each week, planned the activities, partnered with native English speakers and gained better communication skills.

SKILLS & INTERESTS

Languages: Native in Chinese (Mandarin), Fluent in English, Intro in French ;
Computer: Proficient in Microsoft Office Suite, PS, Java, R, MATLAB;
Interests: Motorcycle, Biking, Badminton, Piano, Cooking, Reading.