Jialin Zhang

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EDUCATION

Stony Brook University, *Long Island, USA*   **Aug. 2021 – now**
Ph.D. in Biomedical Engineering, GPA: 3.76

Tufts University, *Boston, USA*   **Sep. 2017 – May 2019**
M.S. in Bioengineering and Biomedical Engineering

Northwest University ("Project 211" University of China), *Xi'an, China*   **Sep. 2013 – Jun. 2017**
B.S. in Bioengineering

RESEARCH EXPERIENCE

Dynamics of Single-cell Sepsis Study   **Nov. 2021 – now**
Advisor: Prof. Jun Wang

Stony Brook University, *NY*

- Conducted literature review and wrote a project outline with a concrete plan
- Prepared DNA-Antibody conjugates and cells, and purified and validated the results for further experiment
- Performed UV cleavage and conducted immunofluorescence staining to scan the fluorescent signal
- Eliminate background signal from signal data using Limma_Batch_Effect_Removal algorithm
- Select and decode DNA sequencing via bisection method

Pinpoint Accurate Statistics in NBA   **Mar. 2022 – May 2022**
Team Leader

- Purified and preprocessed NBA players data for data analysis
- Applied K-means clustering and GMM algorithm to analyze the most frequently shooting position
- Visualized K-means clustering and GMM results of regular and playoffs using bar charts and heatmaps
- Conducted T-test to show difference of making a shot against the same opponent during the regular and playoffs

Pulp Regeneration   **Sep. 2019 – Nov. 2019**
Advisor: Prof. Hongjun Wang and Dr. Saul Weiner

Stevens Institute of Technology, *NJ*

- Made four groups of canine mature permanent teeth samples after pulpectomy
- Sealed them with mineral trioxide aggregate and composite and used slicer and driller to make teeth slices
- Explored the regenerate capacity of DPSCs and PRP by comparing cells and nerves growth around the teeth.
- By searching and reading plenty of relative papers, I knew well about the hot point of this area.

Lean Six Sigma Project Design   **Jan. 2019 – Apr. 2019**
Team Leader

- Identified influence factors (delivery time and food quality) for delivery orders of a restaurant by conducting 2K Factorial Design of Experiments and using Pareto chart with the regression equation.
- Constructed a Minitab model and Lean Six Sigma to optimize operational efficiency by reducing the 40%-decrease of process waste.

Project-based Machine Learning Project—Recommendation System   **Sep. 2018 – Dec. 2018**

- Analyzed users' age, gender, movie ratings and release year and represented data into vector form by SVD.
- Conducted various collaborative filtering methods to build recommendations in Python and perform Grid Search algorithm to find out the optimized parameters of the model.
- Evaluated the whole pipeline using mean absolute error (MAE) and completed the project report.

Model Implementation of Cholesterol Biosynthesis   **Oct. 2017 – Dec. 2017**

- Understood the negative feedback of cholesterol regulation, and reconstructed the models.
- Created and implemented a new mathematic model of the effects on biosynthesis of cholesterol using MATLAB
- Analyzed the relationship between the initial conditions of HMGCR, Cholesterol, and mRNA, and completed the research paper.

Comparative Study of Two Kinds of Hydrogels   **Oct. 2016 – May 2017**

Advisor: Prof. Chenhui Zhu

- Designed experiment, prepared sample hydrogels with different ratios of chitosan, Tween-80, and Human-Like Collagen by lyophilization.
- Tested hydrogels' properties, including pH, swelling ratio, porosity, malleability and biocompatibility.
- Analyzed the data to promote an optimum proposal and composed the graduation thesis.

Process Design of Recombinant Protein Preparation (lyophilized powder)   **Nov. 2016 – Jan. 2017**

Team leader

- Design and prepare the piping layout and make schedules for the whole design process.
- Assign different tasks to different group members (material balance calculation and equipment selection) and help them well finish their design work.
- Created the drawings of technical processes with control points, equipment, and pipeline layout

TEACHING EXPERIENCE

Teaching Assistant, Stony Brook University, *NY*

- **Course: BME 200 Bioengineering in Extreme Environments**   **Aug. 2021 – Dec. 2021**
- **Course: BME 205 Clinical Challenge of the 21st Century**   **Jan. 2022 – May 2022**

WORK EXPERIENCE

Drug Safety Specialist, Pfizer, *Shanghai*   **Oct. 2020 – Aug. 2021**

- Responsible for collecting, monitoring, processing, and distributing adverse event reports and information queries for investigational and marketed products.
- Reviews safety and medical information for the assigned products, including safety components of protocols and studies for assigned drugs.
- Analyze the safety data, determine reportability of scheduled report and report the results with regulatory authority (FDA)

Technical Support, Creative Biogene, *NY*   **Dec. 2019 – Feb. 2020**

- Communicated with customers about the company's product and technical solutions
- Responsible for ensuring the smooth implementation of the project and preparing chemical reagents.

SKILLS

Lab Skills: FPLC, Immunostaining (IHC, ICC), Cell culture, Electron Microscope, Centrifuge, Mass Spectrometry, PCR, Gel Electrophoresis

Software: MS office, Auto-CAD, LaTeX, Git, Minitab

Programming languages: Python, MATLAB, R, Julia

AWARDS & HONORS

"Challenge Cup" National College Student Business Plan Competition, nominated by Shaanxi Province   2016
2nd-class (twice) and 3rd-class (Once) Scholarships for Academic Excellence, awarded by NWU   2014, 2015 and 2016
First Prize in Uniform Design Competition of School of Chemical Engineering of NWU   Apr. 2015

ACTIVITIES

Delivered speech in the celebration of Dragon Boat Festival in Harvard University   Jun. 2018

Volunteer to organize the donation event for children in need in Medford   Nov. 2017

Initiated and arranged a 3-people group to complete a program: Status Survey of Private Nursing Homes in Western China   Sep. 2014 – Dec. 2015