Jialin Zhang

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EDUCATION

Tufts University, *MA, USA*   **Sep. 2017 – May 2019**

M.S. in Bioengineering and Biomedical Engineering

Courses: Biological System Analysis, Molecular Biotechnology, Protein Purification, Principle of Control Release &Drug Delivery

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

B.S. in Bioengineering

RESEARCH EXPERIENCE

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 (the blood clot group, the autologous dental pulp stem cells DPSCs group, platelet-rich plasma PRP group and DPSCs mix PRP group) after pulpectomy
- Sealed them with mineral trioxide aggregate and composite and used slicer and driller to make teeth slices
- Explored the capacity of DPSCs and PRP to regenerate dental pulp in canine mature permanent teeth, which is to compare cells and nerves growth of each groups via Electron Microscope.
- By searching and reading plenty of relative papers, knew well about the hot point of this area.

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

Team Leader

- Implement Lean Six Sigma Method on the 'real world' restaurant business to identify and minimize operational inefficiency problems.
- Identified influence factors (delivery time and food quality) for delivery orders in restaurants by conducting 2K Factorial Design of Experiments and using Pareto chart with the regression equation.
- Constructed a model using Minitab 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 the data of users (users' age and gender, movie ratings by users and release year), and represented data into vector form by SVD.
- Used 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.
- Used MATLAB to implement ODE15s and created a new mathematic model of the effects on the biosynthesis of cholesterol.
- Analyzed the relationship between the initial conditions of HMGCR, Cholesterol, and HMGCR mRNA as well as 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

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**

- Purified antibody and DNA separately by Zeba Spin Desalting Columns, made Antibody-DNA conjugation using FPLC, Centrifugal filters, validated the result with tissue immunostaining.
- Fabricated microbeads coated with ssDNA and validated using cDNA and DNA dye under Microscope
- Made Microbeads array and produced PDMS using Autoclave and Vacuum Pump
- Communicated with customers about the company's product and technical solutions and was responsible for ensuring the smooth implementation of the project and preparing chemical reagents.

SKILLS

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

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

Programming languages: Python, MATLAB, R.

AWARDS & HONORS

First Prize in Uniform Design Competition of School of Chemical Engineering of NWU   April 2015

2nd-class (twice) and 3rd-class (Once) Scholarships for Academic Excellence, awarded by NWU   2014, 2015 and 2016

ACTIVITIES

Delivered speech in the celebration of Dragon Boat Festival in Harvard University   June 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   Sept 2014-Dec 2015