Yuezhe Li

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Summary

- Hands-on experience in mechanistic modeling in immunology and gene therapy.

Skills

- **Applied and Computational Mathematics**: Differential equations, Monte Carlo simulation
- **Programming**: R, Python, MATLAB, SQL, SAS, HTML5 (basic), C/C++ (basic)
- **Visualization**: matplotlib, ggplot, Tableau;
- **Language**: Mandarin (native), English (fluent)

Experience

Metrum Research Group *Tariffville, CT*

Research Intern *September 2020–current*

- Identified biological processes that influence the outcome of COVID-19 infection; conducted sensitivity analysis on a published COVID-19 infection model

University of Connecticut Health Center *Farmington, CT*

Graduate Assistant *September 2016 –current*

- Improved cancer drug targeting by increasing the precision of related reverse engineering algorithms by 30%; developed a benchmark to identify a suitable discretization method
- Explored causes of diabetes by elucidating the molecular mechanisms linking ciliopathy to diabetes; established that ciliary insulin receptor signaling suppresses glucose-stimulated insulin secretion

Illinois State University *Normal, IL*

Graduate Assistant *September 2014 –May 2016*

- Decrease errors in estimating gene activation and deactivation probabilities to less than 1%; developed new models and algorithms for parameter estimation

National Center for Supercomputing Applications *Urbana, IL*

Blue Waters Student Intern *May 2015 – May 2016*

- Provided better meditation monitoring for stress reduction; increased the precision of machine learning models (e.g. random forest, boost, support vector machine) that classify brain states by 30% through combining multiple models and adaptive training
- Improved non-verbal communication in time-sensitive competitive sports; built a user-friendly interactive tool to monitor brain states in real-time with a research group at the University of Houston (1 patent pending)

Leadership and Extracurricular

Yale Graduate Consulting Club *New Haven, CT*

Pro Bono Consultant *February 2021 - May 2021*

- Conduct market analysis for a local biotech startup; conduct Voice of Customers (VOC) research by interviewing key opinion leaders in proteomics research in collaboration with a team of 5

Impact Consulting *London, UK*

Pro bono consultant *January 2021 – current*

- Identified 2 key sectors and developed a marketing strategy for a biotech startup based in Austria

R.D. Berlin Center for Cell Analysis and Modeling, UConn Health Center *Farmington, CT*

Student Instructor for Virtual Cell Workshop *June 2018, June 2019*

- Provided insights into the causes of Alzheimer's disease; built mathematical models for energy production
- Identified potential drug targets to reduce obesity-related inflammation; modified existing mathematical models and compared simulation results to experimental data

Education

University of Connecticut, Ph.D., Systems Biology (GPA 3.9/4.0) *Expected May 2021*

- Increased qualification exam success rate of graduate students on time from ~90% to 100%; coached mock exams

- Awarded 3rd place in Casebook Competition hosted by Yale Graduate Consulting Club; led a team of 3
- Mentored 3 summer undergraduate interns
- Biostatistics (A), Bioinformatics (A), PK/PD modeling and simulation (A)

Illinois State University, MS, Mathematics (GPA 3.9/4.0) *2014 – 2016*

- Instructed and tutored 300 students in college algebra & statistics classes; supervised fellow graduate assistant to teach
- Oral presentation at an international conference with 200+ attendees

Huazhong University of Science and Technology, BS, Statistics (GPA 3.6/4.0) *2010 – 2014*

- Awarded Innovation Scholarship (top 5% of the university), Fellow at Center for Mathematical Modeling (top 5% of the university), Silver Medal from an international synthetic biology contest with 500+ participants

Selected Publications and Book Chapter

- **Li, Y.**, Shrestha, P., Wu, Y., "Primary cilia sensitize insulin receptor-mediated negative feedback in pancreatic β cells." (submitted)
- **Li, Y.**, Yann, T., Vera-Licona, P., "Benchmarking Time-Series Data Discretization on Inference Methods." Bioinformatics (2019).
- Akman, O, Comar, T., Harris, A. L., Hrozencik, D., & **Li, Y.**, "Dynamics of Gene Regulatory Networks with Stochastic Propensities." International Journal of Biomathematics (2018).
- **Li, Y.**, Chang, Y., & Lin, H. "Statistical Machine Learning in Brain State Classification using EEG Data." Open Journal of Big Data (OJBD) (2015).
- Subedi, S., **Y. Li,** C. Early, A. Chan, J. Garza, G. Schreiber, Y. Chang, and H. Lin. "A System for the Analysis of EEG Data and Brain State Modeling." Emerging trends in applications and infrastructures for computational biology, bioinformatics, and systems biology: systems and applications. Q. Tran and H. Arabnia. Cambridge: Morgan Kaufmann, 2016. p447-465.

Certifications

Drug Commercialization, University of California San Diego/ Coursera	*2021*
Business Analytics Nanodegree, Udacity	*2020*
Business Foundation Specialization, Wharton Business School/ Coursera	*2020*
SQL in Data Science, University of California Davis/ Coursera	*2018*
Deep Learning Specialization, DeepLearning.AI/ Coursera	*2018*