Louis B. Viglietta

louisv@princeton.edu | (631) 316-9382 | Princeton, NJ

EDUCATION

Princeton University | Princeton, NJ *June 2024*

- B.S.E. in Computer Science
- Cumulative GPA: 3.976
- Relevant Coursework: Data Structures and Algorithms, Theoretical Comp. Sci., Linear Algebra, Statistics, Optimization

SKILLS

Technical: Object-oriented programming (Java), Least squares and linear optimization (Python, NumPy, CVXPY), Data analysis (Python, R, MATLAB), Proficiency in Microsoft Excel, Word, PowerPoint
Languages: English (native), Spanish (advanced)

EMPLOYMENT EXPERIENCE

Summer Research Intern *Summer 2021*
Princeton University | Princeton, NJ
"Computational design of microbial metabolism to improve ethyl acetate production"

- Predicted growth rate and ethyl acetate production capacity of yeast strains *in silico* by optimizing genome-scale metabolic models in MATLAB, allowing for more efficient study *in vivo*
- Identified candidate genetic modifications in yeast that could increase ethyl acetate production and allow for uptake of additional substrates by adding heterologous pathways to the model
- Introduced *in silico* study to lab group by demonstrating computational techniques and presenting results
- Troubleshot design issues and debugged code through collaboration with lab members and independent research

Student Tutor *January 2021 – present*
McGraw Center for Teaching Learning | Princeton, NJ

- Instruct groups of 10-20 students in multivariable calculus and/or general physics by teaching problem-solving strategies, answering questions, and clarifying fundamental concepts

Student Researcher, Simons Summer Research Program *Summer 2019*
Stony Brook University | Stony Brook, NY
"Role of neutral sphingomyelinase 2 in doxorubicin-induced DNA damage response pathway"

- Helped clarify key biological pathways involved in the mechanism of the chemotherapeutic drug doxorubicin
- Compared induction of critical proteins by culturing mammalian cell lines, conducting gene knockdowns/overexpressions, and treating cells with doxorubicin

SOFTWARE PROJECTS

Chess Game *December 2021*

- Implemented one-player chess game in Java, self-taught Swing/AWT APIs to create GUI and visuals

"Game of Life" Simulator *December 2021*

- Developed interactive simulation of Conway's "Game of Life" in Java using Swing/AWT

Tweet Generator *May 2020*

- Created program that models speech patterns in an individual's tweets and generates new, synthetic tweets using Markov chains – earned gold medal at Long Island Math Fair (Python, NumPy)

EXTRACURRICULARS/LEADERSHIP

First College Council Treasurer *September 2021 – present*

- Meet with executive board to plan out weekly events with 40-80 participants and larger events with 150+ participants
- Communicate with vendors, purchase supplies, and file expense reports to keep track of expenses for council events

AWARDS

Shapiro Prize for Academic Excellence *Fall 2021*

- Prize awarded based on academic performance and range/difficulty of academic program