Yunong Chen
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EDUCATION

Columbia University, School of Engineering Sep 2021 - Dec 2022
M.S. in Applied Math GPA:3.66 *New York, NY*

- **Related Courses**: Numerical Methods, Numerical Algebra& Optimization, Optimal Transport Theory, Complex Analysis, Stochastic Analysis, Algorithms, Data Analysis

Pennsylvania State University (PSU) Sep 2019 - May 2021
B.S. in Math GPA: Major 3.78, Overall, 3.65 *State College, PA*

Ohio State University (OSU) Sep 2017 - May 2019
B.S. in Math *Columbus, OH*

SKILLS

- Python (Numpy, Scipy, Matplotlib, Sympy, Statsmodels etc.), Minitab, Mathematica, MATLAB, Microsoft Office, Latex
- Mandarin (Native)

RESEARCH EXPERIENCE

Fairness in Evolutionary Game Theory Apr 2020 - Sep 2020
Supervised by Prof. Christopher Griffin at PSU *State College, PA*

- Wrote program in Python to simulate results and decreased the running time by 80%
- Used distribution plots, density plot, log plot and found a correlation between cost of living and selfishness
- Published co-edited paper in Physics A with Prof. Griffin

Detecting Bots on social media Aug 2020 - May 2021
Supervised by Prof. Christopher Griffin at PSU *State College, PA*

- Wrote a Python program to transform Unix time into dates and performed data analysis such as detrending moving average, Fast Fourier transform, ARIMA model, MFDFA etc. on a dataset of 2.4 million tweets from ISIS related users
- Divided users into 4 groups based on frequency of posting, then built statistical models for each group
- Developed an algorithm that successfully detected more than 90% robots among those Tweeter users

Population Dynamic Model of Cancer Cells and White Blood Cells Aug 2020 - Dec 2020
Supervised by Prof. Christopher Griffin at PSU *State College, PA*

- Investigated population dynamic of cancer cells and white blood cells through academic journals
- Built game theory model of differential equations for cancer and white blood cells with Python
- Analyzed cancer cells' payoff (survival rate) using 3D phase portrait graph regarding two strategies: whether signal as cancer cell

PROJECTS EXPERIENCE

Simulation of common neuro with sodium and potassium channels Nov 2022 - Dec 2022

- Simulated the behavior of a common neuron, which has sodium and potassium channels using classical Hodgkin-Huxley model
- Compared performance of RK45 and BDF
- Yielded a simulation mathches the experimental results i.e. converges to resting potential, spike train, firing threshold

EXTRACURRICULAR & LEADERSHIP EXPERIENCE

Varsity Soccer Team Sep 2015 - May 2017
Member *Muncie, IN*

- Placed first in Muncie
- Participated in Indiana State Championship

Cryptology Club Sep 2019 - May 2021
Co-founder and President *State College, PA*

- Held weekly meetings to discuss encryption methods such as zigzag cypher, enigma, public key, elliptic curve etc.
- Developed some efficient (polynomial time complexity) algorithm to decipher messages encrypted by different ways and test them with python