

# Gilad Moskowitz

## EDUCATION

SDSU, San Diego, CA

2019 – present

*Applied Mathematics, concentration Communication Systems M.S.*

UCLA, Los Angeles, CA

Graduated: June 2017

*Mathematics B.S. and Chemistry B.S.*

## PROJECTS

- Dynamic Algorithms in Numerical Semigroups
  - Used SageMath to code several new and existing algorithms for properties of numerical semigroups and compared their runtimes
- Numerical Semigroup Python Package
  - Wrote a package with a numerical semigroup class that allows users to do numerical semigroup math in Python
- Sylver Coinage strategies and optimizations, with Professor Vadim Ponomarenko
  - Created a Python environment for testing bots and training ML models that play the game Sylver Coinage
  - Coded several Python bots to try and find an optimized strategy for the game
  - Created a website where people can play the game against other humans locally, or against my bot. Also allows users to upload their own JavaScript code for a bot and test it against my bot
- Vigenere Cipher Cryptanalysis
  - Created a website that encrypts and decrypts messages using the Vigenere Cipher
  - Can also cryptanalyze messages encrypted with the Vigenere Cipher to find the plaintext and key used

## MATHEMATICAL RESEARCH

- The structure theorem for sets of length of numerical semigroups, with Professor Chris O'Neill
  - Wrote several algorithms using Python and Sage to examine properties of numerical semigroups.
  - Developed a series of general proofs to solve a long open problem for certain properties of numerical semigroups.
- Machine learning to determine if the Mobius function is solvable in polynomial time, with Professor Huan Qin
  - Wrote Python programs to generate the data set, create and train the NN model, and test the accuracy of the model.

## WORK EXPERIENCE

**San Diego State University**, San Diego, CA

August 2019 – Present

*Graduate Teaching Assistant:*

- Teaching Calculus II to college students via lecturing during small sections and office hours

**Canyon Crest Academy**, San Diego, CA

April 2019 – June 2019

*Long Term Substitute Teacher:*

- Teaching high-school mathematics with all the responsibilities of a tenured teacher

**HSL Ventures**, Los Angeles, CA

Sept 2016 – June 2018

*Market Analyst and Expansion Consultant:*

- Used functions of Excel spreadsheets (e.g. vlookups, macros, pivot tables) to aggregate and analyze data, including the viability and profit of potential purchases, then generated visualizations and presented analysis to senior management, leading to multiple profitable purchases, some with 40% ROI
- Analyzed the merit of new marketplaces, facilitated expansion onto the profitable marketplaces, and evaluated and selected useful tools for the continued growth and expansion of the company
- Worked with senior management to find new selling categories and established relationships with new vendors, e.g. established a relationship with Hasbro that allowed the company to enter the toy market

**Crinetics Pharmaceuticals, Inc.**, San Diego, CA

Oct 2013 – Aug 2015

*Research Assistant:*

Business Development Support:

- Assisted the CEO in market research, capitalizations, documentation, and organization of pharmaceutical sales
- Examined the various strategies used for sales and growth by the largest pharmaceutical companies

Scientific Research:

- Developed my own project which generated a series of biosensors designed to report receptor structural changes upon binding to ligands and used them to develop a FRET based assay

## OTHER SKILLS

- **Computer Languages/Tools:** Python, SageMath, JavaScript, HTML, CSS, C++, Git, Tableau, Microsoft Office suite