

# Ethan Zang

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## EDUCATION

### Rutgers University, Honors College School of Engineering

September 2017 – May 2021

*Bachelor of Science (B.S.) in Computer Science & Chemical Engineering*, Minor in Mathematics

New Brunswick, NJ

- **GPA:** 3.96 / 4.00
- **Awards & Honors:** Presidential Scholar (Full scholarship awarded to <1% of undergraduates), National Merit Finalist 2017, Dean's List (all semesters), HOSA International Conference 1<sup>st</sup> Prize Biomedical Debate 2016
- **Coursework:** Data Structures, Computer Architecture, Design and Analysis of Algorithms (Fall 2019), Machine Learning (Fall 2019), Linear Optimization, Adv. Calculus, Differential Equations, Multivariable Calculus, Discrete Math

## EXPERIENCE

### Merck & Co.

May 2019 – August 2019

*Software Engineer Intern*

West Point, PA

- Designed automated report generation tool in R (Shiny, Markdown) to develop a robust pipeline for quality analyses
- Collaborated in an agile environment to deploy tool on HPC servers with ~250 employee hours/ year saved on reports
- Refactored user interface for streamlined user experience with data selection and input features in HTML/ CSS
- Utilized Tidyverse package (dplyr, ggplot) to prototype dynamic plot visualizations and statistical method previews

### Computational Hybrid Soft Materials Lab

August 2018 – Present

*Research Assistant* (Advisor: Dr. Meenakshi Dutt)

New Brunswick, NJ

- Collaborated with masters and PhD students to design C++ package for the characterization of peptide structures
- Built 3D equal-width binning and processing methods for positional data to exponentially increase analysis efficiency
- Incorporated analysis package as part of a proprietary Python workflow which automates dynamics simulations
- Awarded 3<sup>rd</sup> Prize Rutgers Departmental Poster Conference 2019 out of ~40 competitors

### Becton Dickinson

September 2016 – May 2017

*Engineering Intern*

Franklin Lakes, NJ

- Analyzed materials data for syringe and injector product development projects using Thermofisher software
- Identified a key supplier product specification error by using statistical t-test and regression analysis in Minitab

## PERSONAL PROJECTS

### Linear Programming Calculator

- Implemented calculator for revised simplex method to solve linear programming problems with greater efficiency
- Launching Java UI with MATLAB Engine and Swing APIs to intuitively define parameters of the problem at hand

### Gromacs File Converter

- Cross-functionally collaborated on refining Python converter to generate usable .txt file from Gromacs .gro file
- Engineered converter to allow for evaluation of dynamics simulation system robustness in C++ and other languages

### Merakhi Company Website

- Prototyping fashionable smart bracelet for social innovation firm so that wearers can effectively combat sexual assault
- Building company website to promote product to investors using HTML/ CSS, JavaScript and various technologies

## LEADERSHIP

### Rutgers Engineering Governing Council

September 2018 – Present

*Chair of Academic Affairs*

New Brunswick, NJ

- Overseeing all student academic affairs in the School of Engineering as the head of the academic affairs committee
- Compiled 10 flyers regarding honors academics and department advising for university-wide dissemination

### Rutgers University Honors College

January 2019 – Present

*Honors College Ambassador*

New Brunswick, NJ

- Led 3 prospective and admitted student tours and information sessions in the Honors College
- Assisted in organizing and facilitating the Presidential Reception for ~100 incoming Rutgers Presidential Scholars

## SKILLS

**Proficient in:** Java, C++, R (Shiny, Markdown), MATLAB

**Some experience with:** C, Python, HTML/ CSS, SQL