

# Claude Roc

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## EDUCATION

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**University of Texas at Austin, Cockrell School of Engineering**  
Candidate for a PhD in Chemical Engineering

Austin, TX  
September 2023 – May 2028

**Northeastern University, College of Engineering**  
*Bachelor of Science in Chemical Engineering*

Boston, MA  
May 2023

## TECHNICAL EXPERIENCE

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### Practical Applications

*Chemical Engineering Co-op*

Woburn, MA  
August 2022 – January 2023

- Specified, designed, procured, and fabricated custom industrial wastewater treatment systems for pharmaceuticals, biotechnology, hospitals, and universities
- Performed calibrations, programming, replacements, repairs, and troubleshooting for client's wastewater systems
- Procured, specified, and sourced equipment such as piping, pumps, control valves, control panels, flow meters and reactor tanks

### Lyra Therapeutics

*Analytical Chemistry Co-op*

Watertown, MA  
June 2021 – January 2022

- Maintained appropriate lab notebook and records in accordance with GMP, GDP, and Lyra standards
- Supported scientist and engineers in manufacturing Lyra Therapeutics drug products for pre-clinical and clinical studies
- Prepared and analyzed samples a multitude of samples using HPLC, GPC, GC, Intrinsic viscosity, DSC, and samples for in vitro dissolution assay

### Waters Corporation

*Chemical Engineering Co-op*

Milford, MA  
June 2020 – December 2020

- Operated, troubleshooted, and improved the fluidic performance of HPLC systems produced by Waters Corporation
- Performed data acquisition and analysis on HPLC systems and to present reports and verbal presentations
- Simulated and optimized mixer designs and fabricated prototypes for additional testing

### Northeastern University Computational Bio-physics lab

*Research Assistant*

Boston, MA  
June 2019 – August 2019

- Executed in-depth analysis of 3D ribosomal structures to detect transformations during protein synthesis
- Designed a script in Perl to web-scrape a protein data bank for information about published ribosome structures
- Analyzed the accuracy of Euler angle rotation measurements to check for bugs within the main code

## ADMINISTRATIVE EXPERIENCE

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### Phi Beta Sigma Fraternity Incorporated – Beta Alpha Chapter

*Chapter Vice President*

Boston, MA  
June 2022 – April 2023

- Assisted the president with overseeing activities, implanting organizational goals, and fostering a positive environment
- Organized events, supported new member intake process and provided aid to chapter members on multiple campuses
- Acted as a liaison between the chapter and stakeholders, including national organizations, other chapters and campus Administration

### National Society of Black Engineers (NSBE) - Northeastern University Chapter

*Chief of Staff, Parliamentarian, Academic Excellence Chair & T.O.R.C.H Chair*

Boston, MA  
April 2019 – April 2023

- Serve as a resource on proper parliamentary procedure during weekly executive board meetings
- Levy fines on executive board members for chapter bylaw and constitution violations
- Created Monthly scholarship newsletters that promoted NSBE scholarships and external scholarships
- Responsible for connecting students with academic resources, maintaining a study material database, and peer tutoring
- Lead a STEM related activity for teens and adults with the Flagship Clubhouse
- Provide teens with a project to design an improved compost bucket for a company called Bootstrap Compost

## SKILLS

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**Software:** Ansys, AutoCAD, C++, MATLAB, Bash, Perl, breadboarding, Signal Express, SolidWorks, Microsoft Office

**Lab Skills:** Pipetting, Weighing, Filtration, Cleaning glassware, Titration, Distillation, Vacuum filtration, Hazardous Waste Disposal, High-Performance Liquid Chromatography (HPLC), Ultra-Performance Liquid Chromatography (UPLC), Inductively Coupled Plasma Mass Spectrometry (ICP-MS), Scanning Electron Microscope (SEM)