

# RICHARD KAPLAN

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Master's and bachelor's degrees related to areas of polymer science, polymer chemistry, polymer engineering, and molecular engineering, with extensive lab experience during both undergraduate and graduate programs, as well as computer science coursework and self-study in a variety of languages including C#, C++, Python, Java, Swift, JavaScript, and others.

## EDUCATION

**University of Michigan**, Ann Arbor, MI

Expected December 2021

*Master of Science in Macromolecular Science and Engineering*

**The University of Chicago**, Chicago, IL

June 2019

*Bachelor of Science in Molecular Engineering  
and Minor in Music with a focus on Composition*

**Glenbrook North High School**, Northbrook, IL, *with highest honors*

June 2015

*Accomplishments:* National Merit Scholarship Recipient; National AP Scholar Award; National Honor Society; Tri-M Music Honor Society; Prairie State Achievement Award; Illinois State Scholar; Glenbrook Scholar; Science Achievement Awards in Physics, Chemistry, and Biology; Winner, Tri-M Composition Contest, 2014 and 2015

## WORK EXPERIENCE

**Macromolecular Science and Engineering Program (University of Michigan)**

2020 – 2021

- 2021
  - Graduate student under supervision of Dr. Abdon Pena-Francesch, Assistant Professor of Materials Science and Engineering, Macromolecular Science and Engineering, and Robotics Institute
  - Research was in the area of bacteria-repellent surfaces on medical devices; specific tasks included chemical synthesis and characterization of anti-fouling coatings, as well as inventory management
- 2020
  - Graduate student under supervision of Dr. Jeff Sakamoto, Associate Professor of Mechanical Engineering, Macromolecular Science and Engineering, and Materials Science and Engineering
  - Research was in the area of solid-state electrolytes for use in lithium-ion batteries; specific tasks included fabrication of gel polymer electrolytes, and assembly and characterization of model battery cells

**Pritzker School of Molecular Engineering (University of Chicago)**

2018 – 2019

- Research Assistant under supervision of Dr. Stuart Rowan, the Barry L. MacLean Professor for Molecular Engineering Innovation and Enterprise
- Research was in the area of one-component nanocomposite materials made from polymers and cellulose nanocrystals
- Aided a graduate student in active laboratory work and research; specific projects included analysis of spectroscopic data to determine necessary purification; additional tasks included assisting in facilitating reactions to form desired products and carrying out weekly safety checks
- Recipient of Institute for Molecular Engineering Fellowship Grant (Summer 2018)

## OTHER EXPERIENCE

- Compose commissioned music pieces for broadcast production students, film students, and video game designers
- Summer work/intern experiences at companies in digital mapping, 3D printing, and environmental nonprofit

## SKILLS

- *Computer*: Familiar with MATLAB, Python, JavaScript, React, C++, C#, Java, Ruby, Swift, Kotlin, PHP, Go, R, SQL, HTML, CSS, Node.JS, ASP.NET, Spring, Android Studio, Bash Scripting, Microsoft Word, Excel, PowerPoint, Google Drive, Adobe Premiere Pro, Logic Pro X, and Finale
- *Social Media*: Facebook, Snapchat, YouTube
- *Languages*: Semi-proficient in Spanish

## FEATURED PROJECTS

- [Game Getter](#):
  - HTML, CSS, JavaScript
  - Makes use of relevant web APIs to show current deals on video games by keyword search and filtered by platform and/or genre
- [Weather Dashboard](#):
  - HTML, CSS, JavaScript
  - Weather app making use of the OpenWeather API. Displays current weather and 5-day forecast for user's current location on load, with the option to search for weather in other cities and access previously searched cities
- [Library of Congress Searcher](#):
  - HTML, CSS, JavaScript
  - Search engine making use of the Library of Congress web API. User can search for items by keyword, with the option to filter by media format.

## HOBBIES

- Music composition and production; playing saxophone, piano/keyboard, clarinet, flute, and guitar; video games; learning about science, creative media, and politics