

## Kunli Liu

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### EDUCATION

#### University of Pennsylvania

Philadelphia, PA

*Master in Computer and Information Technology* GPA: 3.96/4.0

09/2019 - 05/2022

*Coursework:* Computer Architecture; Operating System; Data Structures and Software Design; Algorithm Design and Analysis; Computer Vision and Computational Photography; Database and Information System; Big Data and Machine Learning

#### Michigan State University

East Lansing, MI

*Ph.D. Candidate in Chemistry* GPA: 3.7/4.0

08/2017 - 05/2022

### INTERNSHIP

#### Oracle Corporation

Seattle, WA

*Software Engineer Intern*

05/2021 - 08/2021

**Agile Software Development | Distributed Systems | MicroServices | Event-driven Architecture  
Maven | Cloud Platform Development | Hibernate | SQL**

- Collaborated in an agile team to improve on Back End system of Oracle Hardware Testing platform for test automation of Oracle Servers
- Implemented RESTful APIs to support in-order and atomic execution for a test group
- Optimized the execution of test groups by switching from polling mechanism to message-driven mechanism
- Significantly reduced network latency between Front End and Back End system for test group executions
- Delivered the software product with an above the expectation rating, completed the software documentation, and presented the product to the user team

### PROJECT

#### Music Search Web Application: Node.js | React.js | AWS | JavaScript

05/2021

- Developed a web application that contains music information based on databases hosted on AWS
- Developed user registration system to support functionalities such as user login, following other users, etc
- Used map API to support search based on geographic information and 3NF for data normalization
- Optimized complex queries and reduced their running time for at least one order of magnitude

### EXPERIENCE

#### Michigan State University

East Lansing, MI

*Graduate Teaching Assistant*

09/2017 - 05/2020

- Extensive experience as a graduate teaching assistant for various undergraduate courses
- Facilitated group discussion and team work for both recitations and lab sessions
- Contributed to course development by optimizing lab protocol and improving recitation materials

#### Michigan State University

East Lansing, MI

*Graduate Research Assistant*

09/2017 - present

- Developed surface-enhanced Raman scattering nanoparticles with **2500x** stronger signal compared with existing commercial nanoparticles (patent pending)
- Developed hyaluronic acid derivatives that is **6.5x** more effective than hyaluronic acid (patent pending)
- Developed novel methodology for targeted gene therapy of hypertension treatment based on nanotechnology (patent pending)

### TECHNICAL STRENGTHS

Java, Python, C, AWS, MongoDB, Neo4j, HTML, CSS, JavaScript, Node.js, React.js, Spark, Machine Learning, REST APIs, Maven