

# Hao Liu

<https://github.com/Nwavguy>

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## Education

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| • <b>University of Pennsylvania</b><br><i>Master of Computer and Information Technology; GPA:4.0</i> | Philadelphia, PA<br><i>Aug. 2020 - Dec. 2021 (expected)</i> |
| • <b>University of West Georgia</b><br><i>Master of Business Administration; GPA: 4.0</i>            | Carrollton, GA<br><i>Jan. 2019 - Dec. 2020</i>              |
| • <b>Rice University</b><br><i>Master of Science in Environmental Engineering; GPA: 3.91</i>         | Houston, TX<br><i>Aug. 2014 - Dec. 2016</i>                 |
| • <b>Renmin University of China</b><br><i>Bachelor of Science in Environmental Science</i>           | Beijing, China<br><i>Sep. 2009 - June. 2013</i>             |

## Programming Skills

- **Programming Languages:** Java, Python, C, SQL, Matlab
- **Web Technologies:** HTML5, CSS, Javascript, jQuery, Servlet, Flask, JSP, Spring
- **Databases:** SQL, MySQL, JDBC
- **Technologies:** J2EE, Apache Tomcat
- **Tools:** Git, Junit, IntelliJ, Eclipse, GitHub, Maven, Docker

## Projects

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|--|------------------------------|
| • <b>Online Bookstore (<a href="#">Github Link</a>)</b><br><i>Java Web</i>   | <b>Jan. 2021 - present</b>   |
| <ul style="list-style-type: none"><li>◦ Implemented a full-stack online bookstore with functions including user register, authentication and pagination.</li><li>◦ Designed and implemented the database schema, JavaBean for various modules.</li><li>◦ Implemented Data Access Object(Dao) Layer, Service Layer and Web Layer for User and Book module.</li><li>◦ Connected MySQL database using JDBC to store users' information, update cart, and retrieve booklist to display</li></ul> |                              |
| • <b>LC4 Assembler and Disassembler</b><br><i>Assembler/ Disassembler in C</i>   | <b>Nov. 2020 - Dec. 2020</b> |
| <ul style="list-style-type: none"><li>◦ Read assembly code to machine code, or read in binary code and translate it back to assembly code</li><li>◦ Read in an ASM file, stored the text into a 2D array, parsed the assembly instructions, converted the text to binary equivalent</li><li>◦ Read in an OBJ file, parsed the file, stored the instruction in linked list, and generated the assembly language of the instruction</li></ul>  |                              |
| • <b>BearMaps</b><br><i>Java Server</i>  | <b>May 2020</b>              |
| <ul style="list-style-type: none"><li>◦ Mapped image rastering on multiple zoom levels using a quadtree implementation for NSEW directions</li><li>◦ Efficient parsing and analysis of OpenStreetMap data in OSM XML format</li><li>◦ Routing between two locations on the map by constructing graphs with parsed OpenStreetMap data and using the A* shortest path algorithm</li></ul>  |                              |
| • <b>CS50 Finance (<a href="https://cs50financehl.herokuapp.com/">https://cs50financehl.herokuapp.com/</a>)</b><br><i>Virtual Stock Trading Platform using Python and Flask</i>  | <b>Mar 2020</b>              |
| <ul style="list-style-type: none"><li>◦ Implemented the web service with Python, Flask, SQLite, Bootstrap for online stock trading</li><li>◦ Completed the implementation of register, quote, buy, and sell operations to enable real-time stock trading via IEX Cloud API.</li><li>◦ Deployed the service via HEROKU from Github.</li></ul>   |                              |

## Experience

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| • <b>Odyssey Industrial System, Inc</b><br><i>Planner</i>  | Houston, TX<br><i>Feb 2017 - Mar 2019</i> |
| <ul style="list-style-type: none"><li>◦ Analyzed production and sales data fetching from Global Shop ERP system through standard SQL queries.</li><li>◦ Deployed automation by made Python scripts to reduce time for data updates by 60%.</li><li>◦ Performed various advanced Excel functions such as conditional summation, and macro scripts to increase the efficiency of report generation by 30%.</li></ul> |   |

## Activities and Honors

- Baker Hughes Scholarship (\$9,000), 2014