Melantha Chen

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Education

Northeastern University, Boston, MA — Expected 2026
MS in Software Engineer System
- **Coursework:** Web Design and User Experience Engineering

Dickinson College, Carlisle, PA — May 2024
Dual Degree, B.S. in Quantitative Economy, B.S. in Computer Science
- **Coursework:** Analysis Algorithms, Topic in Data Mining, Computational Theory

Skills

Skill: Python, Java, SQL, CSS, JavaScript, R, SQLite3, MATLAB, Stata, Unity, SpringBoots

Experience

Reaserch Assistant, Dickinson College – Carlisle, PA — Sep 2023 – Jul 2024
- Processed and analyzed a dataset of **300,000 songs**, using **HanLP** and **Python** for lyric segmentation, keyword extraction, and trend analysis, resulting in several frequency datasets with over **100 million** data each.
- Utilized **R** to create detailed visualizations of word usage trends across various artist categories and regions, enhancing data interpretation and presentation.
- Consolidated multiple CSV datasets into a single .db file and utilized **MySQL** to manage the data, enabling seamless front-end and back-end integration for the web-based version of the project.
- Utilizing **React.js** and **Spring** to developed interactive dashboards and advanced visualizations, including dynamic line charts, to facilitate real-time data exploration and analysis by the research team.

Intern, China Construction Bank – Hunan, China — May – Jul 2023
- Conducted **5** site visits to private enterprises, facilitating credit card services and ensuring the completeness of application documents and credit assessments.
- Assisted corporate clients with banking transactions, including foreign exchange and fund-freezing operations.
- Supported **loan** preparation processes, including drafting loan contracts, preparing usage statements, verifying invoices, and liaising with credit review departments to ensure smooth disbursement.

Projects

Device Detective Tool — Jan - May 2024
- Designed and implemented a robust web application using **Java**, **Spring**, **MongoDB**, **Next.js**, **React.js**, and **SockJS**, providing a unified solution for tracking and safeguarding smart devices across platforms.
- Achieved a **35% reduction** in user time spent switching between platforms by centralizing device tracking into a single dashboard.
- Enhanced user security by integrating real-time device activity notifications and multi-platform compatibility.
- Conducted rigorous testing and optimization, improving system response time by **40%**, ensuring smooth and reliable user experiences.

Library Management System — Feb 2024 - Present
- Developed a database-driven Library Management System using **HTML/CSS**, **Java**, **Python**, **SQLite3**, and **Flask**, aimed at streamlining university library operations.
- Reduced transaction processing time by **50%** through automated workflows for book cataloging, borrowing requests, and user role management.
- Implemented a role-based access control system to ensure secure data access for administrators, staff, and students.
- Improved system scalability by optimizing database queries, supporting **10,000+ records** with minimal latency.