

Chantera Lazard

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EDUCATION

Northeastern University, College of Science, Boston MA <i>Master of Science in Bioinformatics</i>	July 2026 GPA: 4.00
University of Houston, Cullen College of Engineering, Houston, TX <i>Bachelor of Science in Biotechnology with a concentration in Bioinformatics</i>	Dec. 2020 GPA: 3.43

RESEARCH EXPERIENCE

Moments with Us, LLC Sacramento, Ca Founder & Owner	Nov. 2022 – Nov. 2024
<ul style="list-style-type: none">• Founded and managed a childcare business, growing clientele through strategic marketing and referrals.• Coordinated healthcare appointments and liaised with medical professionals to support client needs.• Trained and mentored 10 staff members, ensuring high-quality care and operational efficiency.	
Humana Military Louisville, KY (WAH) Benefits Service Representative	Feb. 2022 – Oct. 2022
<ul style="list-style-type: none">• Analyzed healthcare inquiries, extracting key data points to provide accurate and timely resolutions.• Ensured compliance with HIPAA and DHA regulations while processing sensitive health information.• Investigated beneficiary case trends to identify patterns to optimize healthcare operations.	
ScribeAmerica Houston, TX (WAH) Medical Scribe Lead	Apr. 2019 – Feb. 2022
<ul style="list-style-type: none">• Documented patient encounters in real-time, ensuring accuracy and completeness in medical records.• Supported physicians across 5 locations, adapting to diverse documentation styles and clinical workflows.• Promoted to Lead Scribe, training new hires, streamlining documentation processes to improve efficiency, and strengthening physician collaboration to retain and gain more clientele.	

ACADEMIC RESEARCH PROJECTS

Northeastern University, Boston MA Gene Expression Analysis and Visualization Pipeline	Sep. 2024 – Dec. 2024
<ul style="list-style-type: none">• Analyzed transcriptome datasets to identify the top regulated genes across three cancer cohorts by reproducing a differential analysis pipeline from <i>TNMplot.com</i>, contributing to cancer biomarker research.• Conducted and interpreted statistical tests (Mann-Whitney U test) on individual cancer types using R programming, comparing results to <i>TNMplot.com</i> findings to validate data accuracy and provide deeper insights into gene expression patterns across cancer types.• Explored annotated and normalized RNA-seq data by generating box plots, volcano plots, and violin plots to effectively visualize gene expression patterns, enabling the identification of key upregulated and downregulated genes for further research.	
Independent Research RNA-seq Analysis Pipeline	Aug. 2024 – Dec. 2024
<ul style="list-style-type: none">• Developed a custom Python RNA-seq analysis pipeline script to identify potential biomarkers in cancerous and paracancerous liver tissues, retrieving data from GEO and ensuring robust normalization with DESeq2.	

- Designed and automated an RNA-seq pipeline including quality control (FastQC), read alignment (HISAT2), and counts (featureCounts) using custom scripts, ensuring reproducibility and efficiency in the data processing.
- Addressed data variability and experimental design limitations to enhance pipeline rigor, demonstrating the importance of quality control in bioinformatics workflows.

Biomarker Ranker and Therapy Prediction Machine Learning Pipeline

Mar. 2025 – Present

- Designing a machine learning pipeline to rank potential therapeutic biomarkers for breast cancer using RNA-seq data and proteomics datasets from TCGA building off previous pipelines.
- Planning to implement supervised learning models such as Random Forests, Support Vector Machines (SVM), and Gradient Boosting Machines (GBM), utilizing scikit-learn in Python for feature selection and model training.
- Developing data preprocessing steps, including feature engineering on expression data and integration of clinical metadata.
- Currently leveraging AWS EC2 instances for scalable data processing and AWS S3 for data storage, with plans to use AWS SageMaker for model deployment and tuning.
- Planning to compare different ranking methods (statistical and machine learning-based) for biomarker discovery, focusing on model accuracy and clinical relevance.
- Following biomarker ranking, planning to cross-check predictions for optimal drug/therapy selection using DrugBank and CTD (Comparative Toxicogenomics Database), ensuring relevance to clinical applications.
- Validation will be done through comparison with published literature and ongoing clinical trial data to support the therapeutic efficacy of identified biomarkers.

University of Houston, Houston, TX

Small Business Database Developer

Jan. 2020 – Dec 2020

- Designed and implemented a database system using SQL and a Java-based GUI to manage and analyze large datasets, showcasing skills in data organization, integrity, and accessibility applicable to bioinformatics research pipelines.
- Conducted detailed systems analysis, including entity relationship and data flow diagram creation, to align data structures and workflows with complex research or clinical project requirements, emphasizing adaptability and precision in technical problem-solving.

Capstone Research

Jan. 2020 – May 2020

- Analyzed next-generation sequencing (NGS) data to identify potential glyphosate biodegradation pathways in soil microorganisms by developing bioinformatics pipelines, advancing research on environmental remediation.
- Built and optimized pipelines incorporating FastQC, Trimmomatic, and genome assemblers (Spades, Megahit, Ray) and used RASTtk for annotation, enabling efficient and accurate genomic insights.
- Automated data processing using Unix/Linux and Bash scripting, integrating tools like NCBI, UniProtKB, and PFAM to streamline genome and protein analysis, supporting biodegradation pathway discovery.

TECHNICAL SKILLS

Bioinformatic Tools: FastQC, Trimmomatic, Spades, Megahit, Ray, RASTtk, HISAT2, featureCounts, Samtools, MUSCLE-HMMR

Bioinformatic Databases: NCBI, UniProtKB, InterPro/Pfam, BLAST, GEO

Programming Languages: Python, R, C++

Operating Systems: Unix/Linux command-line environments

Version Control: GitHub repository management

Database Management: SQL, Microsoft Access, Database Design

Data management & Analysis: Excel