RACHNA MUNAGALA

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EDUCATION

University of Michigan, College of Literature, Science, and Arts, *Ann Arbor, MI* Sep 2018 - Dec 2022

Bachelor of Science in Life Science Informatics

University Honors

Relevant Coursework:

- Data Structures and Algorithms
- Discrete Mathematics
- Computer Organization
- Statistics and Data Analysis
- Computer Science Pragmatics
- Quantitative Research Methods
- Theory of Computation
- Biostatistics
- Linear Algebra
- Probability
- Models of Social Information Processing
- Bioinformatics and Computational Biology

Certifications: Microsoft Certified: Azure Fundamentals

EXPERIENCE

Avanade: Software Engineering Intern, *Detroit, MI* June 2021 - August 2021

- Converted virtual chat bot recommendation engine that tailors FAQs for users of a Fortune 500 consumer goods company; re-engineered a SQL application in Python, which reduced the frequency of bugs and improved usability
- Created a training dataset based on user data from an Azure CosmosDB database in Azure Databricks; fed training dataset to a Machine Learning Algorithm, to facilitate improved recommendations; supplemented with Market Basket Analysis to account for users with limited data
- Developed a working prototype of a rewards-based program in AdobeXD, targeting users' environmental behavior; presented at the Fuel 2021 Conference and Hackathon

SureTouch Leads: Customer Sales Consultant, *Northville, MI* May 2018 - August 2019

- Communicated directly with customers interested in refinancing services and connected them with loan specialists at Lending Tree, Inc
- Managed and updated large datasets regarding customer information and feedback

ACADEMIC PROJECTS

Machine Learning

- Implemented a simplified version of the "MultiVariate Bernoulli Naive Bayes Classifier" using the NLP Bag of Words model, to classify online Q&A forum posts based on keywords
- Utilized ML techniques, recursion, binary search trees, map data structures, and comparators

Analyzing Metagenomic Datasets to Evaluate Reproducibility of a Study

- Assessed reproducibility of a study that explored potential of micro-aeration technology in anaerobic digestion systems, by analyzing metagenomic datasets
- Utilized bioinformatics tools (FastQC, Trimmomatic, SPAdes, Prokka, and SortMeRNA) to conduct quality control, trimming, assembly, and annotation of metagenomic reads
- Obtained annotated genomes and gained valuable experience in data analysis, enhancing understanding of metagenomic analysis techniques in bioinformatics

Mock SQL Database

- Implemented relational database model in C/C++, utilizing query language to modify and retrieve information based on commands; incorporated dynamic memory, binary search trees, and hash tables

Letterman Puzzle Solver

- Created pattern matching program in C/C++ that analyzes datasets of words from a dictionary and finds a path from starting word to ending word by changing the word one letter at a time; utilized stacks, queues, and deques as primary data structures and depth first or breadth first searching through dictionary

Logistic Regression Models

- Analyzed datasets and fit logistic regression models using R; calculated LD50 values and visualized data through plots

SKILLS

***Languages*:** C++, Python, Javascript, HTML5/CSS3, R, SQL
***Tools*:** XCode, Visual Studio, RStudio, Atom, Git, Bash
***Other*:** Adobe XD, Azure

LEADERSHIP EXPERIENCE

Indian American Student Association - Community Building Core Sep 2018 – Sep 2020

- Collaborated with other students to create community building opportunities for members of the Asian American community at University of Michigan