



Hammad Afzal

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EDUCATION

University of California, Berkeley, CA

Berkeley, USA

Bachelor of Science, Electrical Engineering and Computer Science (EECS)

Aug 2018 - May 2023

Relevant Coursework: Software Engineering, Data Structures, Computer Architecture, Databases, Discrete Math, Linear Algebra, Designing Information and Systems, Foundation, Principle and Techniques of Data Science, Algorithms, UI/UX Design

TECHNICAL SKILLS

Proficient Languages: Java | Python | C | Ruby | RISC V | VB.Net | SQL | HTML5 | CSS3 | PHP | JavaScript

Relevant SWE Frameworks: Rails | Node.js | Bootstrap | Maven | MongoDB | Heroku | React | Nokogiri | jQuery

PROFESSIONAL EXPERIENCE

LESCO, *Software Engineering Intern*

Lahore, Pakistan | Jun-Aug 2022

- Implemented CIBS (Customer Information Billing System) by customizing open source COMPIERE (ERP and CRM) server based on Java that uses snapshots of electric meters resulting in error-free measurements to reduce **80%** of over-billing for **5.8 million** consumers
- Monitored implementation of HR & Admin modules - transitioned from COBOL base legacy system to Oracle DB based CIBS - overseeing data entry, integration, processing, analysis, and troubleshooting, resulting in the centralization of paper-less data, being less labor-intensive, saving both time, energy and being much more eco-friendly in the process

Ibex Global, *Information Database Administration Intern*

Washington DC | Jun-Aug 2021

- Met pre-established deadlines for data analysis and timely reporting of sales & performance-based metrics by assisting developers in writing complex SQL queries and procedures, creating business cases that increased product sales by **20%**
- Recommended and explained the management of statistical techniques and principals that resulted in a **18.5%** reduction in the cancellation rate of services

PROJECTS

Timeless Treasures (React, HTML, Bootstrap, JavaScript, Node.js, jQuery)

[Website](#)

- Conceptualized and executed Timeless Treasures, an innovative social media app, prioritizing accessible UI to empower senior citizens to share wisdom, stories, and recipes, bridging the generational communication gap.
- Led thorough task and competitive analysis, contextual inquiry, and heuristic evaluation leading to efficient development, delivering **80%** of core functionalities within a week while maintaining a strong focus on accessibility.
- Promoted and advocated for user-centric design for seniors by attending conferences and submitting papers, contributing to an increase in HCI research dedicated to this often overlooked demographic.

AgileIterations (Ruby, HTML, JavaScript, Node.js, SQLite3, PostgreSQL, npm, yarn, Nokogiri, Topojson)

- Developed a responsive app using Codio IDE and deployed on Heroku that allows users to learn more about their representatives, political events in their area as well as aggregate, share and view news items in their locality
- Created stories using BDD and integrated Google Civic API to get the keys into apps's production environment.
- Ran migrations to prepare a local host database to store and serve data, further seeded the database with a list of states in the US

RookieDB (Java)

- Designed our very own relational database management system by implementing block nested loop join, sort operator, sort merge, and grace hash join, and a limited version of Selinger optimization
- For concurrency, divided multigranularity (enforcing the availability of appropriate intent locks before acquiring or performing lock escalation) locking into three layers: Lock Manager, the middle layer (Lock Context), and the declarative layer (LockUtil) and integrated the changes into the database
- For recovery, implemented write-ahead logging and support for savepoints, rollbacks, and ACID compliant restart recovery

Movie Classification (iPython Jupyter Notebook)

- Wrote a single function that encapsulates the whole process of a k-nearest-neighbors classifier that guesses whether a movie is a comedy or a thriller, using only the number of times specific words appear in the movie's screenplay
- Imported numpy and matplotlib libraries to generate histograms for comparison using statistical values
- Computed the p-value for our hypothesis test and used bootstrap to construct a **95%** confidence interval for the prediction based on linear regression to predict averages
- Made a function of weighted root mean square error using slope and intercept for a prediction line to find associations

BYoW: 2D Tile Based Interactive Game (Java)

- Designed and implemented a tile-based world exploration engine. The software allows user to interact with objects using arrow keys of keyboard and pseudorandomly generates a new world of explorable rooms and hallways each time it is played using StdDraw class
- Integrated features such as displaying information including cursor position, player names, sound effects, and random theme generation for the game world