**SUMMARY OF QUALIFICATIONS**

* Web development: HTML, CSS, JavaScript, JQuery, D3.js, React.js, Node.js, Spark Java, PHP, WordPress
* Software tools: C#, C++, Java, Python, Git, Linux, Jenkins, Maven, Spring Boot, Jersey, Hibernate
* Database knowledge: SQL, SQL++, Neo4j, MySQL, SQL Server, SQLite
* Cloud tools: SQL Azure, AWS EMR (Apache Spark APIs)

**EDUCATION**

**University of Washington – Paul G. Allen School of Computer Science and Engineering** Sep. 2018 – June 2022

*Bachelor of Science in Computer Science*Seattle, WA

* Cumulative GPA: 3.82/4.00, Dean’s List for ten quarters
* Relevant Courses: Software Design and Implementation, Web Programming, Systems Programming, Database Management, Data Structures & Parallelism, Algorithms

**EXPERIENCE**

**Costco Travel IT**

Software Engineering Intern **(Java, Python,** **MS SQL Server)** Jun. 2022 – Sept. 2022

* Synthesized members’ data in SQL Server and built a data microservice using Java, Spring Jersey, JPA, and Hibernate
* Built a Python recommendation service to suggest 3 out of 16 vacations based on members’ data using the Scikit-learn and Jupyter Kernel Gateway libraries
* Provided a proof of concept (POC) for assembling microservices and member personalized marketing

**UW Svoboda Diaries Project**

[Web Developer](https://www.svobodadiariesproject.org/diary-viewer/) **(JavaScript, JQuery, MySQL, PHP)** Oct. 2021 – Aug. 2022

* Automated person entities recognition on diaries using a name list loaded from the MySQL database
* Generated an entity’s description popup and juxtaposed it with the entity using the JavaScript *offsetTop* property
* Programmed images dynamic loading using the jQuery *scroll* event and accelerated display duration by 88%

**UW Sensors, Energy, and Automation Laboratory**

[WEGO](https://www.streamtools.org/products/wego-word-tool) Developer **(.NET framework, C#)** Jan 2021 – Sept. 2021

* Expedited writers’ table customization process from complex MS Word operations to two settings and one click by providing preformatted tables and an easy-to-use Word plugin called WEGO
* Converted six table templates into OOXML with an online tool and developed insertion logic using C#
* Led the purchase and configuration of the code signing certificate for the software verification process

**EXTRACURRICULARS**

[**Applied Analytics Club @ UW**](http://aacuw.org/)

President Sept. 2021 – May. 2022

* Led nine officers to hold workshops on data topics, networking events, and host a data scientist guest speaker event
* Oversaw newsletter sending schedule, coordinated room reservation, officer applications, and interviews
* Acquired ~18 regular club meeting attendees and 80+ Discord members

Technical Workshop Officer Oct. 2019 – Jun. 2021

* Cooperate with other technical officers to present three workshops per quarter, including **SQL**, [Seattle housing price visualization](https://github.com/alnliu2000/tableau_demo) (**Tableau**), [presidential election visualization](https://github.com/uwappliedanalytics/workshops/blob/main/presidential_election_visualization.R) (**R**), [web scraping](https://colab.research.google.com/drive/14Bex22MsQ6ZoHoTVJ3WKfzAlu2G3nHIP?usp=sharing) (**Python Selenium**)

**SCHOOL PROJECTS**

**Simple DB (Java)**Apr. 2022 – Jun. 2022

* Developed a simple database management system with these functionalities: writing to disks, processing SELECT queries, optimizing SQL joins, data locking/concurrency control for serializable transactions, implementing STEAL/NO-FORCE buffer management policy and database recovery

**Sharded Key-Value Storage Service (Java)**Jan. 2022 – Mar. 2022

* Developed a fault-tolerant, multiple-clustered sharded key-value store service that is linearizable
* Implemented Paxos algorithm to make each cluster available even with some of its servers are dead
* Implemented shards balancing among clusters dynamically when a cluster joins or leaves

[**Investigating Socioeconomic and Climatic Factors of Mental Health Outcomes**](http://students.washington.edu/bhimar/posts/MentalHealth/) **(Python, R)**Oct. 2021 – Dec. 2021

* Found income and college education as the most significant features for predicting poor mental health days
* Conducted propensity score matching and estimated each variable’s effects on mental health outcomes
* Applied the R MatchIt package to discover statistically significant outcomes overlooked by linear regression

[**Random Walk**](https://cse442-21f.github.io/FP-Random-Walk/) **(D3.js, Plotly.js)**Nov. 2021 – Dec. 2021

* Worked in a team of four to develop an interactive web page that explored the concept of random walk
* Built a stationary distribution histogram using D3.js and random walk 2D animation using Plotly.js
* Co-developed an image segmentation demo retrieving RGB values with HTML canvas and pixelating the images on an SVG element with D3.js

**Web Search Engine (C++)**Aug. 2021

* Built a search engine that allowed queries on text files and showed results ranked by search term frequency
* Wrote code to accept clients’ connection to a server socket, parsed HTTP requests, and formatted HTTP responses

**Yipper (JS, Node.js, SQLite)**May 2021

* Built a simple microblogging website that lets users post tweets, “like” the tweets, search for tweets using keywords
* Persisted the tweets in a DB and implemented a Yipper API with four endpoints for retrieving or adding tweets
* Implemented those features using Vanilla JS on top of the given HTML and CSS

**UW Campus Map Web App (React.js, Java)**May. 2021 – Jun. 2021

* Designed a React.js app that enabled querying the shortest path between two buildings on a UW campus map
* Constructed a campus map representation from buildings and paths CSV data
* Employed Spark Java to handle API calls and execute Dijkstra’s algorithm at the backend
* Rendered a campus map and drew the shortest path on HTML Canvas as users selected buildings from dropdown lists

**Logistic Regression Sentiment Classifier (python)**Jan. 2021

* Implemented logistic regression to classify the sentiment of Cornell movie reviews with an F1 score of 0.85
* Vectorized the words using frequency-inverse document frequency (TF-IDF) and trained the model weights on the feature vectors

**Flight Data Exploration (Amazon S3, AWS EMR, Spark Java)**Dec. 2020

* Investigated domestic flight data from 1987 to 2011 stored in Amazon S3
* Coded with Spark Java Functional API on a five-node EMR cluster to gain insight into the average delay from each city’s departure

**Flight Booking App (SQL Azure, Java)**Nov. 2020

* Developed a flight booking app that handled concurrency using JDBC with prepared statements and transactions
* Queried and updated a SQL database on Azure that consisted of flight, user, and reservation data

**What Makes an NFL Team Playoff Bound? (Python)**Jun. 2020

* Found playoff teams are better in Yards per Play, 1st Downs, and quarterback rating than non-playoff teams
* Compared last five years NFL team data in offense, defense, and special teams
* Adopted Python libraries pandas, seaborn, and matplotlib for data wrangling and box plot comparison

**Educational Statistics Analysis (python)**Apr. 2020

* Examined educational levels among genders, races, and ethnicity from selected years between 1920 and 2018
* Use Seaborn library to visualize the relationship among variables and a decision tree regressor from the scikit-learn library to predict the percentage of individuals achieving a particular degree type in a specific year