

ERFAN SHAFAGH

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Summary

A skilled and detail-oriented Computer Science student with expertise in Python, C++, and SQL. Proficient in data structures, algorithms, and problem-solving, with a strong track record in team projects. Experienced in machine learning and data science, including supervised and unsupervised learning, and neural networks. Knowledgeable in Python libraries like NumPy, Pandas, and PyTorch. Adaptable and excellent in communication, committed to innovative solutions.

Skills

- **Programming Languages:** Python, C++, C, Matlab, Bash, HTML, CSS
- **Database:** SQL, SQLite
- **Operating Systems:** Linux, Unix, Windows
- **Version Control:** Git, GitHub
- **Data Science:** NumPy, Pandas, Matplotlib, Machine Learning Algorithms, PyTorch
- **Technical:** Data Structures and Algorithms, Problem Solving, Debugging, Object-Oriented Programming
- **Software:** Jupyter Notebook, PyCharm, Google Colab, MS Office, Visual Studio, Docker, GDB, Valgrind
- **Personal Qualities:** Detail-Oriented, Creative, Quick learner, Hardworking
- **Soft Skills:** Teamwork, Energetic, Strong communication skills, Reliable and responsible

Projects

Database Management

Apr 2024

Database Systems | CMPT 345 | SFU

[GitHub](#)

- Created a responsive database system with a partner using SQLite which manages and organizes large data.
- Applied entity-relationship Modeling, database design, SQL schema creation, data population and Python application development by peer reviewing which ensured the quality and correctness of the project.
- Designed multiple normalized tables and avoided data anomalies, ensuring data integrity and consistency and implemented complex queries.

Socket Networking

Feb 2024

Operating Systems | CMPT 300 | SFU

[GitHub](#)

- Engaged with a team to use UDP sockets in C to achieve two-way communication between users over a network.
- Handled simultaneous operations and incorporated error handling to address potential issues by Utilizing multi-threading, sockets, UDP, and C language to enhance the responsiveness of the chat program.
- Ensured efficient system communication by using UDP sockets to Implement a reliable messaging system.

Bank Simulation

Oct 2023

Data Structure and Programming | CMPT 225 | SFU

[GitHub](#)

- Cooperated with a team to design and implement the bank simulation application, demonstrating effective teamwork and proficiency in data structures and algorithms.
- Designed dynamic circular queues, ensuring FIFO order and dynamically adjusting capacity to represent the bank lines.
- Achieved a bank simulation system in C++, utilizing priority queues using a binary heap and queues to manage customer arrivals and departures.

Movie Title Generator

Self-directed Project

July 2024

[GitHub](#)

- Developed a Multilayer Perceptron (MLP) neural network to generate creative movie titles.
- Implemented and trained the model using PyTorch and CUDA for GPU acceleration.
- Processed and prepared a dataset of movie titles for training the neural network.
- Utilized advanced Machine Learning techniques and model optimization for efficient text generation.

Personal Portfolio Website

Self-directed Project

Jan 2024

[GitHub](#)

- Developed a personal portfolio website, using sections to showcase skills and projects.
- Designed a user-friendly navigation system in JavaScript with both desktop and hamburger menus.
- Implemented responsive design principles in CSS to ensure accessibility across different screen sizes.
- Utilized HTML, CSS, and JavaScript to create an interactive and visually appealing portfolio.

Spotify API

Self-directed Project

Jun 2023

[GitHub](#)

- Developed a Python script to process audio files, extract metadata, and update a Spotify playlist.
- Integrated with the Spotify API to search for songs and add them to a specified playlist.
- Included multiple audio file formats, using multiple libraries to support MP3, FLAC, and M4A.

Education

Bachelor of Computer Science

Simon Fraser University | Burnaby, BC

Jan 2023 – Present

- Current CGPA: 3.23
- Expected graduation date: Late 2025

Experience

Python Tutor

Simon Fraser University | Burnaby, BC

Feb - Mar 2023

Volunteer

- Utilized diverse teaching methods, ensuring the student could grasp the Python material effectively.
- Enhanced my English-speaking skills during many long tutoring sessions.
- Planned tutoring sessions effectively, allocating time to cover various topics and address student needs.

Mathematics Teacher

Freelance | Iran

Mar 2020 – Dec 2022

- Instructed secondary school students in derivatives, integrals, and linear algebra which helped them improve their skills in math.
- Adapted communication style to resonate with the younger generation, using relatable examples and modern references to make the concepts more engaging and accessible.
- Enhanced time management skills by having short sessions to cover topics.

Relevant Coursework

Artificial Intelligence, Database Systems, Operating Systems, etc.

Interests

- Listening to Music and Podcasts

Watching Movies and Series

Kaggle Competitions
- Involving Tech Communities

Traveling and Exploring Cities and Countries

Playing Video Games