Fauzaan Qureshi

Email | Github | LinkedIn

Summary

I am a highly motivated and experienced software engineer with a passion for solving complex problems. I have over 2 years of experience in the industry, during which time I have developed a strong skill set in various programming languages and frameworks. I am an effective communicator and team player, and I thrive in fast-paced and challenging environments. I am constantly seeking to learn and grow, and I am excited about the opportunity to contribute my expertise to a dynamic and innovative team.

Skills

Technical Skills:

Python, Flask, REST API, HTML5, JavaScript, JQuery, AWS Lambda, Django, Git, SQL, Keras Tensorflow, PyTorch, Convolutional NN, Reinforcement Learning, Web Scraping, MongoDB, DynamoDB, C++, Java, C, Android

Soft Skills:

Curiosity, Critical thinking, Ownership, Unambiguous communication, Time management, Accountability, Adaptability

Work Experience

Q3 Technologies

Software Engineer **June 2021 - Present**

Management Portals – Fullstack

- Fullstack implementation of Customer Management Portal (CMP) using Flask and JS/JQuery for easy and intuitive management of customers and orders, used by 200+ employees of Client.
- Migrated legacy code components (written in .NET) as well as designed new functionalities for Employee Management Portal (EMP).
- Refactored parts of existing EMP code to optimize for space and processing time.
- Implemented a custom token based login directly from the EMP to the CMP.
- Designed a Singleton "Environment" class (by implementing a metaclass) that read and stored the config file at server startup.
- JS libraries used: Dropzone, DataTable, MultiSelect, Bloodhound
- Python libraries used: Flask, WTForms, SQLAlchemy, Pandas

APIs on AWS - Backend

- Developed RESTful APIs on API Gateway for Angular frontend of an Online Consultation site.
- Used AWS Lambda backend for various CRUD operations as well as for authentication for Stripe and Vonage, and for processing discounts and coupons.
- Implemented Exponential backoff to deal with TooManyRequestsException.
- Used AWS DynamoDB for storing Users, Products, Consultants, Credits, etc.
- Implemented strongly-consistent reads to ensure one-time update of credits and one-time invocation of sendEmail.

SQL to NoSQL Database Migration

- Designed a Python script that queries data from MS Access, processes it and writes it to a collection in MongoDB.
- Had 38 "modules" with multiple related tables each (with avg. 1 lakh+ rows per table), where the relations had to be converted to a nested structure.
- Developed a recursive generator function to standardize the structure of input as much as possible across modules, while allowing module specific overrides and variations.
- Also, due to implementing as a generator, the script could handle any amount of data without running out of space.

Other Tasks

- Developed Proof of Concepts for new projects/clients.
- Ex. 1>Designed a dependency resolution algorithm to identify and resolve circular ownership of assets, given a table of Person and all the types and share(quantity as %) of assets they own.
- Ex. 2>Given two versions of auto-cad designs as pdfs, detect and summarize the differences between them. Used OpenCV to draw contours and bounding boxes around differences. To summarize the differences, pitched the idea of designing and training Convolutional Neural Networks.
- Debugged and fixed problems in 3+ time-critical python projects in collaboration with respective teams and as a result was recognized by 2 Appreciation awards by the CTO.
- Helped recruiting Junior and Senior Software Engineers, leveraging expertise in Python, by taking core Python interview rounds.

Process9 Technologies

Intern **January 2021 – May 2021**

NLP Models

- Designed functionality to generate subtitles (.srt files) given a video file.
- Developed a function to process the video file, extracting raw audio input stream using PyDub and Wave and fed it to Google Cloud API for speech-to-text conversion.
- Used Gradio to take the video file input and allow the subtitle file download.
- As a proof of concept, designed and trained Transformer-Attention models for Text-to-Speech conversion that took phonemes as input and generated Mel Spectrogram as output.
- Analyzed and reported the performance of models, varying their architecture and hyperparameters.

Other Tasks

- Contributed to open-source by fixing a bug in the Gradio video input element.

Projects

Music Engine

Python | Java | Inter-process communication | Object-Oriented Design | Subprocess | Pipes

- An algorithm to generate rhythm and melodies. Implements various OOP concepts like inheritance, abstraction, encapsulation and polymorphism in Python.
- Communicates in a structured format with a Java subprocess using pipes to utilize its MIDI libraries.

AI CLASSICAL MUSICIAN

Python | PyTorch | Keras Tensorflow | Pandas | GAN | Attention

- Implemented different models to compare and analyse the ability to continue a given input melody.
- Best performance: Attention model - 7 seconds, Worst performance: GAN model - 0-1 seconds, Other models: GRU DRNN - 2 seconds, Associated GRU - 4 seconds.

DEEP Q-LEARNING

Python | Keras Tensorflow | Numpy | MatPlotLib | CNN

- An light-weight implementation of DeepMind's Playing Atari with Deep Reinforcement Learning paper. Achieved scores in range of 62% of DeepMind's AI scores.

TRADE BOT SIMULATOR

Python | Web-Scrapping | Multiprocessing

- A simulated trading environment where users can create a bot to trade on different stocks, with configurable initial parameters.
- The bots receive real-time market data and take trading decisions based on Fibonacci-weighted and heuristics averaging.

MIDI-SYNTHESIZER

Java | C++

- Simple POC for C integration in Java. Maps MIDI notes to keyboard and plays them on keypress without waiting for carriage return, using getch from C++.

Education

B.E. Civil Engineering

2017-2021

BITS Pilani, Pilani, Rajasthan