Zumaad Khan

khanzumaad@gmail.com | portfolio: zumaad.me | github.com/zumaad
504-259-2036 | 50 Leon St | Boston, MA 02115

EDUCATION

Northeastern University, Boston, MA — Sept 2017 - May 2022

Candidate for a Bachelor of Science in Computer Science

Related Courses: Object Oriented Design, Algorithms and Data, Networks and Distributed Systems, Artificial Intelligence, Database Design

TECHNICAL KNOWLEDGE

Languages:	Python, Javascript, Java, SQL, HTML/CSS
Frameworks:	React, Django, Flask
Tools:	Docker, Kubernetes, Logstash, Postgres, AWS RDS, AWS EC2

WORK EXPERIENCE

TripAdvisor • **Software Engineer co-op (Security Operations)** — July - December 2019

Re-Engineered Data Pipeline *(Kafka, Kubernetes, Docker, Python, Logstash)*

- Sunsetted RabbitMQ messaging infrastructure handling TBs of data a day and replaced it with fault tolerant and reliable Kafka deployment
- Migrated data consumers and producers to new Kafka interface and implemented lost dead letter functionality resulting from switch to new message broker system
- Created base classes for consumers/producers to avoid repeated logic, handle background tasks, and leverage multithreading for consumption causing consumption rates to improve by ~25%

Created AutoSoc *(Python, Flask, Swagger, Angular, Postgres, Docker, Kubernetes, Jira)*

- Developed an automated response system for internal security alerts that sends questionnaires to relevant employees and escalates or handles security tickets automatically based on their response
- Created fail safe for alerts that couldn't be handled by alerting analysts along with linking questionnaires to jira tickets in the backend and automatically populating them with relevant information as it arrived
- Built customizable notification service that aggregated all in-house messaging functionality and exposed it behind Web API

Developed Interactive DMARC Dashboard *(Python, Javascript, Postgres, Docker, Kubernetes)*

- Developed interactive graph-based UI with ability to filter results based on domain, business unit, and email subject to help business units see what emails they sent failed DMARC validation
- Designed and deployed parser in Kubernetes to interpret and persist DMARC reports with automatic emails containing parsing status and suggestions to improve parsing success rate

PROJECTS — *Visit zumaad.me for more* **projects!** — **Code and demos: *github.com/zumaad***

Sonar/Camera Streaming RC Robot *(Python | Javascript | React | Websockets | Hardware/Electronics)*

- Created a robot controlled by a raspberry pi with the ability to move, replay its movements, stream a camera feed, and stream sonar data that is turned into a radar display on the frontend
- Developed a websocket server that runs on the raspberry pi to respond to commands sent from the frontend by turning servos, sending camera frames, and sending sonar data
- Implemented a UI with React to send commands to the websocket server, display the sonar data as a radar, display the camera feed, and store command history with playback options
- Interfaced with hardware such as a camera, servos, and sonar sensors on the raspberry pi to move the robot and send camera and sonar data to the frontend.

Terminal Messenger *(Python | Sockets | Networking | AWS)*

- Developed real-time messaging service for terminal from scratch using sockets and no other networking library
- Implemented user-friendly terminal based UI with dedicated windows for input and output, scrolling to see message history, and colors to differentiate sent and received messages
- Persisted message history and user metadata with DynamoDB

HTTP Server *(Python | Sockets | Networking)*

- Built HTTP server and implemented load balancing, reverse proxying, and static asset delivery without use of external networking libraries
- Designed event loop using generators and the select system call to utilize concurrency thus preventing long running requests from blocking the server without the use of threading
- Implemented server models such as thread-per-client, thread-per-request, and coroutine-per-client

SchedulingFor.me - *(Python | Javascript | Django | React | mySQL | AWS RDS)*

- Created online scheduler/time-management tool with data persistence, user authentication, and a dynamic user interface
- Utilized React to allow users to specify task hierarchy, set deadlines, track progress, and sort tasks based on deadline