

# Murtuza Kainan

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## Experience

### **Software Development Engineer II, Amazon Q in Connect, AWS; New York City, NY – March 2024 - Present**

I currently work on the Amazon Q in Connect team and work on building solutions to automate customer service interactions using Generative AI Technologies like Large Language Models (LLMs). I have worked on tooling for model evaluation, and synthetic data generation, backend infrastructure to customize inferencing, and automation using Agentic orchestration techniques. I also mentor junior engineers and contribute to hiring efforts for the team by performing technical interviews for software engineering candidates.

### **Software Development Engineer II, Amazon Connect Cases, AWS; New York City, NY – July 2021 - March 2024**

As an engineer on the Amazon Connect Cases team I helped to build a scalable case management system that works standalone and integrates powerfully with the Amazon Connect cloud call center available via AWS. I contributed to core case management features, telemetry and operational readiness, scale out of the product for large customers, and core infrastructure efforts like resource tagging, and a distributed deletion infrastructure for GDPR compliance.

### **Software Engineer, Application Frameworks, Bloomberg L.P.; New York City, NY – April 2018 - July 2021**

As an engineer on the R+ runtime team I developed features for the new JavaScript based runtime powering the Bloomberg Terminal and its associated server-less backend compute infrastructure. I helped to prototype and release new features, developer tools, instrumentation, and performance optimizations for the primary application framework running on top of a JavaScript/V8 based runtime. I also contributed to recruiting at Bloomberg by performing technical interviews for software engineering candidates and serving as a lead for Bloomberg's internal Intern Puzzle hunt.

### **Software Engineer, Equities Financial Apps, Bloomberg L.P.; New York City, NY – August 2017 - March 2018**

I pre-trained (i.e, worked full-time before receiving Bloomberg's new hire training) on the Equities team and contributed to a new data ingestion backend architecture for financial applications delivering distribution data (about equity distributions such as dividends) to Bloomberg Terminal users. I also designed, developed, and deployed a ticket management bot for the team that made use of Bloomberg's internal ticketing infrastructure.

### **Software Engineer Intern, Qualtrics, Seattle, WA – May 2016 - August 2016**

I worked on designing and developing the first version of a mobile SDK for embedded deployment of surveys and ads in customer applications for iOS and Android. I also contributed performance improvement features to the SiteIntercept survey embedding platform, and prototyped a new micro-service to power the platform's content management API.

## Education

### **Purdue University, West Lafayette, IN, USA - August 2013-May 2017**

Bachelor of Science in Computer Science with a minor in Physics,  
CGPA: 3.52, Concentrations: Systems Programming, Artificial Intelligence, Software Engineering

## **Technical Knowledge**

### **Programming Languages**

I am proficient in and have spent the most time working with the following languages: JavaScript/TypeScript, Python, C/C++, Java/Kotlin. I am very interested in, but have basic knowledge, of Rust, Golang, and the Lisp family of languages.

### **Web Technologies**

I am familiar with frontend web development using frameworks such as React, and Angular. I have also worked on backend services using a variety of programming languages and runtimes such JavaScript/Node.js, Python/flask, Java, Kotlin, and C++. I am also familiar with the multi-process architecture of Chromium and have basic knowledge of embedding JavaScript runtimes using the V8 JavaScript engine.

### **System Design and Operating Systems**

I have a working knowledge of process management, system calls, multi-threaded application design, and OS/Kernel features for UNIX-like operating systems. I have limited knowledge win32 APIs and desktop technologies. I have an understanding of the tradeoffs involved when trying to design scalable, fault tolerant, and resilient distributed systems.

### **Databases Technologies**

I have a working knowledge of SQL based relational database systems and NoSQL document based storage systems such as MongoDB and DynamoDB. I also have basic knowledge of search platform technologies such as Apache SOLR and ElasticSearch.

### **Software Engineering Workflow**

I am proficient at using the git source control system and have experience working on teams that make use of agile software development methodology and iterative, scrum based development practices.

### **Artificial Intelligence, Data Science and Machine Learning**

I have a working knowledge of logistic regression, Naive-Bayes Classification, and K-means clustering analysis and basic knowledge of neural network based supervised, unsupervised, and reinforcement learning approaches. I have a working understanding of the architecture of Transformer based Foundational models and Large Language models, and have experience making use of these models to build applied AI solutions and Agentic Orchestration systems.

### **Cloud Computing**

My primary experience is in working with AWS Cloud Infrastructure. I have a working knowledge of Data (DynamoDB, S3, Redshift, OpenSearch), Compute (EC2, ECS, Lambda), API and Networking (API Gateway, ALB, NLB, Route53), Middleware (SQS, SNS, Kinesis) technologies. Apart from foundational Cloud technologies, I have experience working with orchestration technologies such as Step Functions and AI Infrastructure tools such as Bedrock and SageMaker. I have used configuration as code technologies such as AWS' Cloud Development Kit (CDK) to standup infrastructure that makes use of the aforementioned technologies.