

Raneem Tarfa

Software Engineer

Troy, MI | [LinkedIn](#) | [GitHub](#)

Full-stack software engineer at Amazon with expertise in cloud infrastructure, real-time data pipelines, and backend systems. Passionate about building scalable solutions and mentoring others in computer science.

EXPERIENCE

Software Engineer (Full-Stack)

Dec 2023 — Present

Amazon

Arlington, VA

Designed and built real-time data pipelines processing 800+ weekly surveys and 580k+ learner transcripts using Lambda, SQS, and RDS, reducing completion visibility from 3 hours to real-time. Led an LMS migration and developed an AI chatbot prototype for manager training that achieved 94% positive feedback. Optimized legacy systems by archiving 16M+ records with improved batching and indexing.

Software Development Engineer

Aug 2022 — Dec 2023

Amazon Web Services (AWS)

Herndon, VA

Enabled Linux support for an internal CLI by resolving certificate and OS compatibility issues across high-security cloud regions. Designed a dynamic timeout algorithm for monitoring canaries using the Haversine formula to reduce false alerts. Served as primary on-call engineer for production services, managing high-severity incidents and maintaining SLA compliance.

Software Engineering Intern (Full-Stack)

Jun 2021 — Aug 2021

Cvent

Tysons Corner, Virginia, United States

Developed features for the Attendee Hub using React and TypeScript with GraphQL backend. Implemented comprehensive test coverage including unit, integration, and UI automation tests using Cucumber and Postman. Managed code with Git and deployed features through Jenkins CI/CD pipelines.

Computer Science Teaching Assistant

Feb 2021 — May 2022

University of Virginia

Charlottesville, Virginia, United States

Guided students through debugging and core computer science concepts in CS 2150: Program and Data Representation. Provided detailed assignment feedback and collaborated with faculty to improve course materials and structure.

Award Winning Team, 2020 DataJam Pasos Libres International Competition

Sep 2020 — May 2021

Fundación Pasos Libres

- Developed data-based solutions to identify, analyze and georeference patterns, networks and hotspots of human trafficking during this weeklong remote competition
- Designed a system with Figma and IBM Cognos that would use data analysis to identify high risk individuals and send a warning alert when they approach highly-trafficked areas
- Received mentorship from Fundación Pasos Libres and IBM to develop our winning solution

Interview Specialist (Founding Member)

Aug 2020 — May 2022

Cracking the Interview

Charlottesville, Virginia, United States

Developed technical and behavioral interview preparation curricula for UVA students. Partnered with major tech companies including Microsoft and Amazon to support recruiting initiatives. Grew the organization from startup to 400+ members and secured over \$2K in funding.

3D Design Intern, Hirshhorn Museum ARTLAB+

Jul 2020 — Aug 2020

Smithsonian Institution

- Built a virtual reality exhibition in Mozilla Spoke depicting an area of D.C. crucial to the go-go scene to showcase both the historical and contemporary elements of its music and culture
- Interviewed by Makers Lab DC to discuss the process of creating the space, which was visited by hundreds of guests during the showcase

Coding & Design Intern

May 2020 — Aug 2020

Empathable

- Created immersive interactive experiences for a virtual empathetic journey called "Unfold", using technical and design skills to dive deep into human emotions
- Created text-message chatbots with Twilio detailing narratives that support and inform users through the experience of self-love in addition to experimenting with automated conversational chatbots through Twitter
- Designed and rendered several visual elements of the self-love experience, including a bird that would be scanned as a QR code to play an audio message

Language Commons Assistant

Jan 2020 — Mar 2020

University of Virginia

Charlottesville, Virginia, United States

- Staffs the Language Commons (LC) front desk during the academic semester
- Maintains a welcoming, energetic atmosphere in the Commons, supports LC programming & events

- Operates and troubleshoots LC tech equipment, such as the projectors, green screen, and VR headsets, and designs L.C. event flyers

Practical Psych Fellowship

Kaleidoscope Group

Jun 2019 — Aug 2019

Washington, District of Columbia, United States

- Learned practical psychology concepts and discussed their application to the real world
- Focused on active and insightful group work and discussion
- Completed and presented a personal project/experiment on artistic expression as a result of emotion and its role in different stages of life

3D Art Intern

Abrams Wearable

May 2019 — Jul 2019

Alexandria, Virginia, United States

- Worked alongside Natalie Abrams in her residential studio at the Torpedo Art Factory in Alexandria
- Gain insight into 3D art techniques for resin, paint, and jewelry creation with tools such as the vacuum chamber while grasping the process of developing a successful art business

Freelance Artist & Small Business Owner

Oct 2013 — Jun 2021

Etsy Shop

- Own and operate a small online Etsy business selling handmade clay jewelry and original artwork
 - Additionally sell traditional commissions including personal portraits and album covers for song artists
 - Improve digital marketing, product quality, and customer service through trial and error
- Link: etsy.com/shop/raneemuArt

EDUCATION

University of Virginia

Sep 2019 — Jun 2022

Bachelor of Arts - BA in Computer Science

Also minored in French

Completed bachelor's degree in 3 years

PROJECTS

Lyric Translator

Lyric Translator takes in a song title and artist and translates its lyrics into a specified destination language

Python-based music player application, Muse Music Player

Developed a Python music player application with functionality to download, organize, and play music files. Focused on user experience and efficient local file management.

APEX Dance Crew Choreographer

Taught and coordinated 11 dancers for a dance set to be performed at a live performance; held weekly practices and office hours

Nick Cave Workshop 2020

A collaborative project with artists of various styles and UVA artist-in-residence Nick Cave as an advisor

Face to Face: Portraits of Our Vibrant City

As one of 10 artists, I was paired with a community member of Charlottesville, VA and commissioned to create their portrait, which was exhibited in The Bridge's Belmont gallery, then gifted to the individual.

- High-quality prints were produced for display in public venues throughout Charlottesville.
- Was interviewed by PBS for an episode of "The Art Scene" to discuss the project

Kindness Tree Mural

Painted a "kindness tree" mural for a local Charlottesville elementary school, where students regularly post notes of kind acts they have witnessed

Artistic Expression Through the Generations

- Built a personal project on the emotional influence on artistic expression and how it differs across generations
- Interviewed strangers of various age groups and invited them to create drawings interpreting various emotionally-linked words such as "joy" and "fear" and analyzed the correlation in abstractness and expressiveness across age groups

Rideshare matching app for college students, RideShare UVA

Designed and prototyped a mobile app connecting college student drivers with student riders based on matching origin/destination, gas price, schedules, and common interests. Created wireframes and prototypes to communicate the concept.

Collaborative multiplayer study platform for CS coursework, Study Game

Built a collaborative study game with faculty guidance to encourage peer discussion and reduce imposter syndrome in CS coursework. Designed multiplayer game logic informed by game theory research to improve student confidence and engagement.

Data-driven alert system for identifying high-risk areas, Human Trafficking Alerts

Worked on a team to create a data-driven alert system for identifying high-risk areas related to human trafficking. Designed visualizations and dashboards to help organizations target resources effectively.

CERTIFICATIONS

2019 Celebrating Art Competition , Celebrating Art	May 2019
2019 Scholastic Art & Writing Awards , Scholastic	Mar 2019
2018 Scholastic Art & Writing Awards , Scholastic	Mar 2018
2018 TR Cook Youth Awards of Excellence , Optimist Club of Greater Vienna	Jan 2018
2017 Scholastic Art & Writing Awards , Scholastic	Mar 2017
Programming Foundations with JavaScript, HTML and CSS , Coursera	

SKILLS

Python (Programming Language) · Object-Oriented Programming (OOP) · E-business · Programming · Fine Art · User Experience (UX) · Adobe Photoshop · Linux · Java · HTML · Cascading Style Sheets (CSS) · Figma (Software) · C++ · SQL · Tableau · GIMP · Mozilla Spoke · React.js · JavaScript · PHP · Node.js · Bootstrap · Django · GraphQL · Angular · REST · Rails · AWS EC2 · AWS Lambda · AWS S3 · DynamoDB · Git · Docker · Jenkins · Postman · Cucumber · TypeScript · SQS · API Gateway · SNS · RDS · Monitoring · Algorithms