

Athens, GA, 30605
USA

Kushajveer Singh

(706) 461-9944
kushajreal@gmail.com
kushajveersingh.com

EDUCATION

University of Georgia, Franklin College of Arts & Sciences
Master of Science in Computer Science
▪ Major GPA: 3.82/4.00

Athens, GA, USA
Jan 2021 – Dec 2022

Punjab Engineering College (Deemed to be University)
Bachelor of Technology in Electronics and Communication Engineering
▪ Major CGPA: 7.0/10.0

Chandigarh, India
Aug 2016 – Jun 2020

TECHNICAL SKILLS

- Software Engineering, Full Stack Development, Computer Vision, Graph Machine Learning
- C, C++, Python, Git, GitHub, Circle CI, Docker, Shell Scripting, Web Scraping
- **Web Development:** HTML, CSS, Sass, JavaScript, TypeScript, jQuery, React, Next.js, Redux, Material UI, Stripe, Bcrypt, OAuth, Sanity, Jest, Node.js, Express, Django, PHP, MySQL, PostgreSQL, MongoDB, REST APIs
- **Machine Learning:** PyTorch, fastai, PyTorch Geometric, PyTorch Lightning, Hydra, Optuna, Triton, NumPy, pandas, Matplotlib, OpenCV, Scikit-learn, Dask

WORK EXPERIENCE

Full Stack Developer Athens, GA, USA
IT Department of College of Agriculture and Environmental Sciences, UGA Jul 2022 - current

- Migrated a legacy *Microsoft Access* database to *PostgreSQL* with 18 years of data in it
- Implemented a parser in *Node.js* and *Express* to do real time *Access* to *PostgreSQL* query conversion
- Created the development and production servers, which included doing IP whitelisting, backup configuration with a local storage server, periodically syncing development and production servers
- Built a program in *Node.js* to prevent people from accessing the SQL queries from outside
- Automated the data entry pipeline using *Python* and *JavaScript*, resulting in a reduction of time from 2 minutes per handwritten form to 25 seconds on average, by implementing autocomplete functionality for various fields
- Used *Selenium* to automate browser-related tasks, like downloading an invoice from UPS, downloading reports
- Used *Next.js/TypeScript/Redux/Material-UI* to convert 3 existing programs from *JavaScript/jQuery*
- Rewrote the entire codebase for a proprietary language, which included converting information from a 200-page manual to a *Next.js* application and updating the queries from *Access* to *PostgreSQL*

Graduate Teaching Assistant Athens, GA, USA
Computer Science Department, UGA Jan 2022 - Aug 2022

- Led weekly meetings and facilitated group discussions for the course *Discrete Mathematics for Computer Science*
- Held one-on-one office hours for 2 transfer students, covering the entire course in detail while covering practical applications of the content

ADDITIONAL EXPERIENCE

Google CS Research Mentorship Program Athens, GA, USA (Remote)
Student Sep 2022 – Dec 2022

- Selected for a 12-week Google Research mentorship program, supporting pursuit of computing research

Winner TechGig CodeGladiators Punjab, India
Hackathon May 2019 – Jul 2019

- Won the first solo place in Artificial Intelligence hackathon where 15 teams were selected from across India from a pool of about 0.6 million candidates
- Built a fully deployable and unsupervised parking space detection system using PyTorch and OpenCV
- Ability to adjust predictions based on where cars are parked over time

Third place North-Zone IndiaSkills Nationals Chandigarh, India
IT Software Solutions for Business Sep 2018 – Nov 2018

- Built desktop application using C# and android application using Java to win third place at IndiaSkills nationals
- Both applications fetched data from a *MySQL* and *phpMyAdmin* database setup

PEC IEEE showcase Chandigarh, India
Student project Feb 2017 – Apr 2017

- Created an 8-bit computer on breadboard using NAND chips, with Add, Subtract logic and 2-byte memory module

PROJECT EXPERIENCE

YouTube Video Platform

- Built fully-responsive React/Next.js/TypeScript/Material-UI web app using YouTube API and deployed on Vercel
- Implemented video section, category section, responsive channel and video cards, channel pages, video pages with ability to play videos and show related videos

Group Video Chat

- Built group video chat application using Agora, and deployed the backend on Heroku and frontend on Vercel
- Conference chat with multiple people at same time, screen share, private/group messaging, admin controls, polls
- Worked with an enterprise size codebase and added features on top of it by reading documentation

Chat Messaging App

- Built fully-responsive full-stack chat messaging application using React/TypeScript/Bcrypt/Stream Chat API
- Support for authentication, Twilio SMS notification, direct and group chats, emojis and reactions, GIF support
- Deployed React frontend on Vercel, and deployed Express.js backend on Heroku

Ecommerce Website

- Built full-responsive and scalable modern ecommerce website using Next.js/TypeScript and deployed on Vercel
- Used Next.js as backend endpoint, stripe for managing payments, shipping rates and entire checkout process
- Manage entire content of website using Sanity, to change details of products or add new products on the go

Music Player and Discovery App (WORK IN PROGRESS)

- Built fully-responsive modern music player app using React/Tailwind CSS/TypeScript/Redux/Shazam API
- Choose genre and view top songs, see top charts and artists for the country or worldwide
- Music player with controls to go to next/previous song, repeat, shuffle, fast forward, adjust volume
- Fully functional search and pages to explore most popular songs in the country, using IP Geolocation API
- View song's lyrics and official video, related songs, and other songs by the artist

Video Sharing Social Media App (WORK IN PROGRESS)

- Built fully-responsive full-stack video sharing social media app using React/Next.js/TypeScript/Tailwind CSS/Zustand/Sanity
- Google auth to register and login user, ability to upload, publish, share, comment on and like the videos
- Advanced search functionalities, filter by categories, profile pages, and see suggested accounts

Sort Visualizer

- Built React/TypeScript/Redux/Material-UI web app for visualizing sorting algorithms and deployed on Vercel
- Implemented over 30 sorting algorithms, and can view up to 9 algorithms in parallel
- Can adjust animation speed, pause, restart, and generate 4 types of random arrays

JSON/YAML Graph Visualizer (WORK IN PROGRESS)

- Built React/Next.js/Redux/Material-UI web app to convert JSON/YAML data into graph for improved readability
- Wrote YAML to JSON parser in TypeScript

Bookstore application

- Built full-stack bookstore application using HTML/CSS/JavaScript for frontend and Django/SQLite for backend
- Implemented user authentication with email, change/forgot password, edit profile, advanced search options, cart management, apply promotions, entire process for placing an order

3D Human Reconstruction

- Engineered a machine learning project to generate full human body 3D object from random noise
- Combined StyleGAN, Pose Estimation, RGB-to-3D object models from 4 different code repositories
- Upgraded PyTorch dependency from 0.4.0, 1.4.0, 1.9.0 to 1.11.1 and CUDA from 10.x to 11.3

Semantic Image Synthesis

- Open-sourced the first public implementation of GauGAN paper by Nvidia
- Implemented PyTorch GAN model to convert a paint image with predefined colors into a realistic image

EXTRA EXPERIENCE

- Maintain a blog with 16 published blog posts
- 22 Coursera certifications in fields of Data Science, Machine Learning, Recommender Systems
- CVPR 2021 workshop paper reviewer for Biometrics Workshop, jointly with the Workshop on Analysis and Modeling of Faces and Gestures