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Kushajveer Singh

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Skills

- Software Engineering, Full Stack Development, Computer Vision, Graph Machine Learning
- **Web Development:** Figma, HTML, CSS, Sass, BEM, JavaScript, TypeScript, React, Redux, Framer Motion, Next.js, Material UI, Chakra UI, Node.js, Express, Django, PHP, MySQL, PostgreSQL, REST APIs, Heroku
- **Machine Learning:** Python, PyTorch, Torchvision, Kornia, PyTorch Geometric, PyTorch Lightning, Hydra, Optuna, Triton, fastai, NumPy, pandas, Matplotlib, seaborn, Scikit-learn, Hugging Spaces, Gradio, OpenCV
- **Other:** C, C++, Git, GitHub, Circle CI, Docker, Shell scripting, Web Scraping, Beautiful Soup, Selenium

Employment

Full Stack Developer   **University of Georgia**   **Jun 2022 – current**

- Migrated a legacy Microsoft Access database to PostgreSQL and wrote a parser in Node.js to maintain legacy programs which converts Access queries to PostgreSQL queries
- Created the development and production server using Node.js and Express
- Automated the data entry pipeline using Python and JavaScript, resulting in a reduction of time from 3 minutes per item to around 10 seconds on average

Graduate Teaching Assistant   **University of Georgia**   **Jan 2022 – Aug 2022**

- Led weekly meetings and facilitated group discussions for the course Discrete Mathematics for CS

Projects

- **Sorting Visualizer.** Built an application for visualizing sorting algorithms using Next.js, Redux, Framer Motion, Material UI. Implemented over 20 sorting algorithms and added functionality to run multiple algorithms in parallel and view their statistics after the run is completed.
- **3D Human Reconstruction.** Random noise is used to generate a color image of the full human body, this image is then fed to a pose estimation model to crop the person, and using this single image a 3D object of the person is created including both the foreground and background. Done using PyTorch.
- **Bookstore application.** Created an online bookstore application using Django, with support for user authentication through email, change/forgot password, cart management, inventory management, and full process for placing/editing an order including payment method.
- **Parking space detection system.** Implemented a fully-deployable system to detect parking spaces from video feed using PyTorch. It won the first place in TechGig CodeGladiators where 12 teams were selected from all across India through 3 rounds of screening.
- **Paint a Picture.** Implemented a model using PyTorch that converts an image painted using a predefined set of colors to a realistic image. This was the first open-source implementation of the paper GauGAN by Nvidia, released to the public.

Additional Experience

- Maintain a personal blog, discussing recent papers and in-depth tutorials.
- Paper reviewer for CVPR 2021 Biometrics Workshop, jointly with the Workshop on Analysis and Modeling of Faces and Gestures
- Paper reviewer and presentation judge at Georgia Junior Science and Humanities Symposium (GJSHS)
- Represented Chandigarh (India) at the North-Zone regional finals in IT Software Solutions for Business in IndiaSkills competition
- Made an 8-bit computer on breadboard. Implemented Add, Subtract logic using NAND chips with memory modules. Presented the work to high-school students at PEC IEEE Project showcase.

Education

Athens, GA, USA	**University of Georgia**	**Jan 2021 – Dec 2022**

- M.S. in Computer Science, Dec 2022 (expected). GPA: 3.81/4.0

Chandigarh, India	**Punjab Engineering College**	**Aug 2016 – Jul 2020**

- B.Tech. in Electronics and Communication Engineering. CGPA: 7.0/10.0