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Work Experience

Software Engineer L3 (AI & ML), BrainCraft Ltd, Dhaka, Bangladesh, **December 2022 - Present**

- Engineered **Generative AI** models for image creation in Cartoon.ai, propelling it to top-grossing status.
- Optimized **AI-driven photo enhancement** modules, using open-source models, incorporating upscaling, deblurring, denoising, and artifact removal, which improved image quality for over **500K** users.
- Collaborated intensively in developing and deploying a **semantic image segmentation** model, elevating user experience and delivering precise segmentation functionality to a user base exceeding **10 million**.
- Implemented a comprehensive system for **text-to-image** and **text-to-gif** generation using stable **diffusion models** and Python, leveraging advanced machine learning techniques and image processing algorithms.
- Planned and implemented an Image to Video making module using **OpenGLES** and **MediaCodec** API for the GIFMaker and Add Music to Video android apps, resulting in over **250k** downloads on the Google Play Store.
- Developed a core video encoder/decoder module using raw **C++** libraries and the Android NDK, increasing efficiency on lower-end devices and **expanding** availability by **22%**.
- Managed and guided a team of four members in the successful development of two feature-rich BgRemover and Slideshow apps, leveraging Android Core functionalities, MVVM architecture, custom rendering techniques, and advanced video encoding/decoding technologies.

Software Engineer, LiiLab, Sylhet, Bangladesh, **January 2021 - December 2021**

- Architected and Programmed the Intro Maker app, leveraging Canvas and Native Android APIs to create stunning intros. Achieved an impressive milestone of over 100k downloads on the Play Store.
- Optimized GkQuiz's rank list functionality using **Firebase** Realtime Database and Firestore, achieving a remarkable 4x performance boost. Attracted over 250k users on the Play Store.

Technical Skills

- **Computer Vision and ML** : Pytorch, CNN, RNN, transformer, NumPy, Scikit-learn, OpenCV, Matplotlib, Pillow.
- **AI Tasks** : Image - classification, Segmentation, enhancement, Colorize, Upscale, Faceswap. Image Generation - Inpainting, Outpainting, text to image, Image to image, Diffusion Models, Image to Video, Video to Video with SVD.

- Proficient knowledge in Algorithms, Data Structures, Dynamic Programming, Number Theory, Probabilities.
- Utilized RenderScript and OpenGL ES for graphics rendering.
- Solved over **2200+** Data Structure & Algorithmic problems.
- Experienced in Agile Environment, MVVM and MVC Architecture, Github, and Bitbucket.
- Programming Languages: **Python**, **C++**, Java, Kotlin, Swift.
- Others : Docker, fastapi, gradio, MySQL, SQLite

Education

Bachelor of Science in Mathematics
Shahjalal University of Science And Technology, Sylhet, Bangladesh, June 2020

Competitive Programming Achievements

Competitive Programming & Contests, November 2015 - August 2020
- Expert, Rating **1767** in Codeforces. ID : stsaikat
- 4 star, Rating 1844 in CodeChef. ID : thestsaikat
- Top **1.1%** in Leetcode. ID : sunipun
- Participated in Code Jam 2019 Round 1B, 2017 - 2019 ACM-ICPC Dhaka regional preliminary contest

Open source projects

- Video To Audio Converter - Android app
  Android app to extract high-quality audio from videos, built with Java, Kotlin, FFmpeg and MediaCodec
- Classification Made Easy
  To make classification training, validation and test easier with different architecture with just a few lines of code.
- Semantic aware Image search
  Developed an image search engine with semantic meaning of an image utilizing vectordb and clip interrogator.

Voluntary Activities

- Moderator & Trainer, Euclid Programming Club, SUST, January 2017 - December 2020
  Conducted over 30 programming workshops, training 200+ students in competitive programming
- Admin & Program coordinator, Shuddho Social Organization, Sylhet, Bangladesh, July 2015 - July 2019