INDRAJIT MURUGAPPAN

Project Lead | AI Engineer

AllGoVision Technologies Pvt Ltd | Bangalore, India

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SUMMARY

Dedicated software professional with 8 years of experience in video analytics software development using deep learning and image processing concepts. 4+ years of experience in writing, maintaining and releasing production level code to clients. Currently looking for challenging and exciting opportunities in the field of Artificial Intelligence/Computer Vision

EXPERIENCE

April '23 – Present (1+ years)

Project Lead | AllGoVision Technologies Pvt Ltd.

- Successfully delivered the Face Recognition (FR) solution to a couple of clients with the desired product customizations
- Co-ordinated with the sales team in collecting multiple requirements from different clients
- Managing a team of 4 members, including development and testing, to enhance the quality and stability of the product

October '20 – April '23 (2.5 years)

Lead Engineer | AllGoVision Technologies Pvt Ltd.

- Leading the FR team, developing and maintaining both client and server code in multiple projects
- Worked on hardware-based optimizations including FP16/INT8 for Nvidia GPUs and OpenVino for Intel CPUs and iGPUs
- Developed and deployed multiple DL models: mask detection, facial landmarks detection, face pose classifier

September '17 – September '20 (3 years)

Senior Software Engineer | AllGoVision Technologies Pvt Ltd.

- Involved in coding and maintaining the server code of Automatic Number Plate Recognition (ANPR) module.
- Deployed ANPR servers for multiple countries including India, Jamaica, Brazil, etc.

February '17 – July '17 (6 months)

Computer Vision Algorithm Engineer | Add Innovations Pvt Ltd.

- Developed code for finding defective units, in a conveyor belt setup, which included buttons, brake shoe parts, AC coils & screw threads
- Implemented multiple computer vision techniques to achieve more than 95% accuracy in the above-mentioned projects

EDUCATION

PENNSYLVANIA STATE UNIVERSITY

University Park, PA, United States

Aug '13 to Dec '16

- **MS** in **Electrical Engineering (Signal and Image processing)**
- **GPA: 3.48/4.0**

PSG COLLEGE OF TECHNOLOGY

Coimbatore, Tamil Nadu, India

July '08 to May '12

- **BE** in **Electronics and Communication Engineering**
- **GPA: 8.63/10 (Distinction)**

SKILLS

TECHNICAL

- PYTHON, C++
- IMAGE PROCESSING
- COMPUTER VISION
- DEEP LEARNING
- CNN, ResNet, MobileNet
- GIT
- DOCKER

LIBRARIES

- TENSORFLOW
- OPENCV
- KERAS
- SKLEARN
- MXNET
- NUMPY
- TKINTER

February '16 – July '16 (6 months)
Computer Vision Software Engineer | SensoVision Systems Pvt. Ltd.

- Involved in image/video enhancement projects such as low-light enhancement, turbulence removal
- Single handedly coded and successfully delivered a CD key detection project using image processing methods

DL OPTIMIZATIONS

- OPENVINO (INTEL)
- TENSORRT (NVIDIA)
- TRITON (NVIDIA)

MAJOR PROJECTS

FACE RECOGNITION FOR CLASSROOM

- Leading the FR team for the project which involves marking attendance, finding presence and measuring the attention levels of the students in the classroom
- Designed and implemented a new registration process using REST APIs with proper feedback for every face that is getting registered in the database for future recognitions
- Successfully completed the optimization (for Nvidia GPUs) of all FR models to FP16 and INT8 which helped in reducing the complexity by ~0.25 times of the original models
- Also completed the CPU optimization of the entire FR pipeline using OpenVino (for Intel devices) which made it possible to deploy a CPU-only FR solution in certain use cases

FACE RECOGNITION WITH MASKS

- Involved in training of DL models for mask detection, face pose classifier. Implemented a method to synthetically add masks to faces which helped in data generation.
- Optimized the FR server code, including the above-mentioned models, which enabled the support of masked face recognition without drop in accuracy and improving the overall throughput
- Designed and implemented a new face tracking algorithm which helped reduce the false/duplicate recognition of faces by a factor of 1/10

AUTOMATIC NUMBER PLATE RECOGNITION

- Developed code for detecting the license plates of vehicles using a combination of various image processing methods
- Responsible for developing and maintaining the ANPR server code for multiple countries and making releases as and when necessary
- Designed and developed a new annotation tool GUI for marking different types of license plates, the results of which were used in training DL models for plate detection