Deval Shah

Portfolio

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Education

- **School of Engineering and Applied Sciences, Ahmedabad University** — Ahmedabad, India
  Bachelor of Technology in Information and Communication Technology; GPA: 3.25 — *July. 2014 – May. 2018*
- **Asia English School** — Ahmedabad, India
  Higher Secondary Education; GPA: 3.68 — *Aug. 2012 – March. 2014*

Experience

- **Uncanny Vision** — Bangalore, India
  Deep Learning Engineer — *July 2018 - Present*
  - **Automatic Traffic Control System (ATCS)**: Implemented a computer vision based object tracking algorithm in C++ in the ATCS pipeline leading to accuracy improvement of unique traffic congestion count from 83.5% to 91%.
  - **Neural Network Optimization**: Implemented a pruning algorithm in pytorch that effectively pruned an object detection model by 35%(reduction in training parameters) with 0.6% accuracy loss and nearly 3x performance gain on Nvidia Tegra TK1 boards.
  - **Japanese OCR**: Developed a classification model using custom CNN architecture in pytorch and post processing algorithm for classifying Kanji(121 classes) and Hiragana(42 classes) characters on Japanese number plates.
  - **Automatic Number Plate Recognition(ANPR)**: Currently working on different optimization methods to improve the performance of deep learning models in ANPR pipeline on low compute devices.
- **Uncanny Vision** — Bangalore, India
  Deep Learning Intern — *Jan 2018 - May 2018*
  - **Optical Character Recognition(OCR)**: Designed the (CNN + RNN) based architecture and trained on more than 3.5L number plate images for the OCR model on the top of base configuration and improved the accuracy of overall system from 82% to 89%.
  - **Object Tracking**: Designed and implemented a linear model based tracking algorithm in C++ for Automatic Number Plate Recognition(ANPR) pipeline to handle repeat license plates over time sequences of same vehicle in a live camera feed.
  - **Bug Fixes**: Fixed stability issues like memory leaks, job scheduling during multi-threading, managing CPU loads etc. during initialization of multiple instances of Automatic Number Plate Recognition(ANPR) system.
- **School of Engineering and Applied Sciences, Ahmedabad University** — Ahmedabad, India
  Teaching Assistant — *Aug 2017 - Dec 2017*
  - **Data Analytics and Visualization**: Hosted weekly tutorial programming sessions on data mining tools, statistical analysis and visual representation of data.
    Jan 2016 - May 2016
  - **Data Structures and Algorithms**: Conducted tutorial sessions, curated theory/lab assignments and advised students on academic matters.

Academic Projects

- **Pedestrian Detection**: Azure based object detection application to detect persons in highly dense environment.
- **Visual Question Answering**: Deep learning system that answer questions based on an image built using Keras with CNN and LSTM architectures.
- **Face Image Generation**: Using deep convolutional generative adverserial networks(DCGAN) and robust pca, generated real world like face images in latent space of input dataset.
- **Gesture Controlled Robot**: Robot built using AtMega 32 chip and controlled using 3 axis accelerometer sensor (ADXL335).
- **Text Encryption Tool**: Encryption tool built for text files using Blowfish encryption algorithm in Java with GUI.

Programming Skills

- **Languages**: Python, C++, C, Java, SQL **Frameworks**: Azure, PyTorch, Keras , Django, Torch

Administrative Responsibilities

School of Engineering and Applied Sciences, Ahmedabad University Ahmedabad, India

Treasurer *Jan 2016 - Dec 2017*

- **Event Management Committee**: Managed the financial aspects of the events held in the college.Arranged sponsorship for the events.

Member *Aug 2016 - Dec 2017*

- **Technical Committee**: Organized hackathons, inter-college tech quiz competitions, tech talks etc. Developed a website for the registration of events.

Yuva Unstoppable, NGO Ahmedabad, India

Member *May 2016 - July 2016*

- **Mentor**: Taught basic programming in C to more than 30 underprivileged kids.

Honors and Awards

Inter College Hackathon *July 2017*

Runner's Up

- **Computer Vision Tool**: Built a plug and play tool using Javascript PSX and WebGL libraries enabling users to develop simple computer vision applications using GUI.

CII Smart Cities Competition *Nov 2017*

Finalist

- **Smart Surveillance**: Presented a design solution of smart surveillance in cities, enabling smart vision in CCTV cameras using AI techniques.