VIVEK KOODLI UDUPA

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EDUCATION

Clemson University *Expected Graduation - May 2019*
Master of Science in Computer Engineering Overall GPA: 3.5/4.0
Department of Electronics and Computer Engineering

Visvesvaraya Technological University *August 2013 - June 2016*
Electronics and Communication Engineer

TECHNICAL SKILLS

Programming Languages	Python, C++, C, Java, MATLAB
Libraries	NumPy, Pandas, Matplotlib, SDL 2.0
Software & Tools	PyTorch, Tensorflow, JMP, VisualStudio, Git, LaTeX

ACADEMIC PROJECTS

DeepLearning (PyTorch)

- Developed a Convolutional Neural Network to detect and classify ten categories of bullying actions from given images.

Artificial Neural Networks (MATLAB)

- Developed a Multilayer Feed Forward ANN with learnable parameters for logistic activation function.
  - Learnable parameters over standard fixed parameters increased the efficiency by 30%
- Character Correction using Hopfield Network.
  - Partially distorted characters were matched to their nearest resembling English alphabets using Hopfield Network based on the principles of Hebbian learning.

Computer Vision (C)

- Convolution using mean filters and sliding windows for image smoothing
- Character recognition using Canny edge detection filters
- Improvised character recognition using thinning, end-point and branch-point detection
- Semi automated segmentation using active contours and Ranged image segmentation based on surface normals

Data Driven 2D Game Development (C++ and SDL 2.0)

- Designed a 2D game engine in C++
  - *Incorporated Object Pool, Factory, Observer and Singleton Design Patterns*
    Game features : Explosions, Collision Detection and developed Artificially Intelligent sprites
- Image Rendering in C++ GUI using C++ SDL 2.0 primitives

Advanced Data Structures (Python)

- Optimization of Bellman Ford Algorithm - Implemented SPFA algorithm in Python 3.0 which optimized the performance of Bellman Ford algorithm on random graphs by 70%.

RELEVANT COURSES

Computer Vision, Artificial Neural Networks, Analysis of Linear Systems, Non-Linear Controls, Statistical Methods I, Robot Manipulators, 2D Game design, Data Structures, Analysis of Tracking Systems, Deep Learning