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 Graduated with Distinction

TECHNICAL SKILLS

Proficient	C, C++, MATLAB
Familiar	Python, MPI
Software & Tools	LaTeX, JMP, VisualStudio, Photoshop

ACADEMIC PROJECTS

Advanced Data Structures (Python) *Fall 2018*

- 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%.

Data Driven 2D Game Development (C++ and SDL 2.0) *Fall 2018*

- 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
  - *Recognized as one of the top ten projects among 90+ projects*

Artificial Neural Networks (MATLAB) *Spring 2018*

- 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) *Fall 2017*

- 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

UNDERGRADUATE PROJECT

Smart Water Detection System *Spring 2016*

• A novel smart system that detects leaks in water distribution pipelines and updates the database periodically with water consumption parameter.

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