

VASU NEGI

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EDUCATION

University of Florida, Gainesville, FL

Master of Science, Computer Science

Relevant Coursework: Machine Learning, Pattern Recognition, Computer Networks, Analysis of Algorithms, Advanced Data Structures, and Mathematics for Intelligent Systems

GPA: 3.77

Aug 2019 - May 2021 (Expected)

Maharaja Surajmal Institute of Technology, Guru Gobind Singh Indraprastha University, New Delhi, India

Bachelor of Technology, Information Technology

Cumulative Performance Index: 80.18

Aug 2013 - May 2017

SKILLS

Languages: Python, F#/AKKA.NET, Java, C++, SAP ABAP, MySQL

Web Technologies: HTML/CSS, Django, React, Node.js, Express, MongoDB

Machine Learning: PyTorch, Numpy, CVXPY, Pandas, Keras, TensorFlow, OpenCV

Platforms/Tools: Jupyter, Git, Google Collab, Wireshark, Adobe Live Cycle Designer

WORK EXPERIENCE

Infosys Limited, Gurgaon, India

Oct 2017 - July 2019

Systems Engineer

- Participated in Agile development practices to develop Function Modules and Report Programs from scratch to incorporate KYC (Know Your Customer) in new and already existing forms to eliminate inactive directors from the system.
- Designed, Maintained and implemented Adobe forms using Adobe Live Cycle Designer that allow corporate entities, and professionals to access MCA (Ministry of Corporate Affairs) services.
- Maintained and debugged already deployed Function Modules, Report Programs, Data Dictionary, and Adobe forms.
- Developed Forms using Angular 7 that would allow 3rd party entities to register themselves as Income Tax service providers to provide income taxpayers freedom, flexibility, and ease in accessing these services.

PUBLICATIONS

- Vasu Negi**, Suman Mann and Vivek Chauhan, "Devanagari Character Recognition Using Artificial Neural Network", IJET (Volume 9 Issue 3 Jun- Jul 2017), pp.2161-2167.
- Vasu Negi**, Suman Mann and Vivek Chauhan, "AIDS Prediction using Decision Tree Data Mining Techniques" 2017 4th International Conference on "Computing for Sustainable Global Development" (INDIACom), New Delhi, India, 01st - 03rd March 2017, pp. 6062-6065.
- P. Kaur and **V. Negi**, "Techniques based upon boosting to counter class imbalance problem — A survey", 2016 3rd International Conference on "Computing for Sustainable Global Development" (IEEEExplore), New Delhi, India, 16th - 18th March 2016, pp. 2620-2623.

ACADEMIC PROJECTS

REAL TIME FACIAL EXPRESSION DETECTION AND EMOTION RECOGNITION USING CONVNET, Pattern Recognition, [Hyperlink](#)

Technologies: Keras, Git, Python, OpenCV, Numpy

- Machine Learning Application for detecting facial expressions of the user and recognize emotions using **Convolutional Neural Networks** and **OpenCV**.
- Implemented the modules using **Keras** to create and train **ConvNet** while using techniques such as Dropout and Batch Normalization to improve the performance of the model, and OpenCV to track facial expressions and display the emotions on the screen in Real Time.
- The models were trained on **Kaggle** to take advantage of much larger RAM and GPU, and the performances were plotted and compared.

FAKE IMAGE DETECTION USING FINELY TUNED CONVNET WITH EXPLANATION, Prof My Thai, [Hyperlink](#)

Technologies: PyTorch, Kaggle, LIME, Numpy

- Machine Learning program for detecting image manipulation using finely tuned **Convolutional Neural Networks**.
- Implemented the program using PyTorch to create and finely tune the ConvNet on the GAN-generated dataset.
- Used LIME (Local Interpretable Model-Agnostic Explanations) to present the contribution of each feature in the predictions of the data samples.

PASTRY: SCALABLE, DECENTRALISED OBJECT LOCATON AND ROUTING FOR LARGE-SCALE PEER-TO-PEER SYSTEMS, [Hyperlink](#)

Technologies: F#, AKKA.NET, Git

- Used **AKKA.NET**'s Actor modeling in F# to build an overlay network, implemented the Pastry Protocol, and a simple object access service.
- Implemented the network join and routing as described in the following paper: [hyperlink](#).
- Evaluated the model on 35k (maximum) peers and simulated the setup of the overlay network and routing of messages among these peers.

ASYNCHRONOUS GOSSIP AND PUSH-SUM PROTOCOL SIMULATION USING ACTOR MODEL, Distributed Operating Systems, [Hyperlink](#)

Technologies: F#, AKKA.NET, Git

- Used **AKKA.NET**'s Actor modeling in F# to implement Gossip and Push-Sum algorithms used for **group communication and for aggregate computation**.
- The algorithm was tested on Full Network, 2D Grid, Line, and Imperfected 2D Grid topologies and interesting finds were presented in the output file.
- Implemented a failure model and a fault tolerant model to handle the faulty nodes and observe the convergence of the network.

LUCAS SQUARE PYRAMID, Distributed Operating Systems, [Hyperlink](#)

Technologies: F#, AKKA.NET, Git

- Used **AKKA.NET**'s Actor modeling in F# to build a distributed system solution to solve the Lucas Square Pyramid while utilizing concurrent computation.
- The application distributed the jobs among various actors where each actor task was to solve a bunch of problems and report the results back to the supervisor.
- The application used **multiple cores** on a single machine as well as on **multiple machines** when connected to a LAN to solve the problem much faster than a traditional program.

URL – SHORTENER, [Hyperlink](#)

Technologies: Node.js, Express, and MongoDB

- Built a website from scratch that transforms long links to nice, memorable, and trackable short URLs.

TASK SCHEDULER, [Hyperlink](#)

Technologies: Java, Git

- Implemented **Min-Heap** and **Red-Black Tree** from scratch for efficiently storing, retrieving, and updating the data in our system.