

EDUCATION

University of Florida, Gainesville, Florida

Aug 2019–May 2021

Master of Science - Computer Science, Herbert Wertheim College of Engineering

GPA: 3.8/4.0

- **Courses:** Distributed Systems, Algorithms, Database Systems & Implementation, Network Data Streaming, System Design, Machine Learning, Projects in Data Science, Computer Networks

Indian Institute of Technology (IIT) Jodhpur, Rajasthan, India

Jul 2011–May 2015

Bachelor of Science, Computer Science and Engineering

- **Courses:** Complex Networks, AI & Pattern Recognition, Image Processing, Operating Systems

PROFESSIONAL EXPERIENCE

Jr. Research Engineer, IoTSPACE Pvt. Ltd., Maharashtra, India

Jan 2018–Apr 2019

- Enhanced data security by ~80%, by encoding the MQTT protocol over a Mesh topology of IoT products.
- Solved *brown-out memory flush* and failure tolerance issues to prevent data loss on Raspberry Pi 3 & Arduino.

Software Engineer, Voylla Fashions Pvt. Ltd., Rajasthan, India

May 2015–Dec 2016

- Lead a team of 3 in developing an interactive webApp - '*Virtual Try-On*' - to virtually try jewelry online.
- Devised a *Data Centralization process* by ETL mechanisms to act as feed to the Data Visualization tools.
- Automated and standardized ~70% of the image-editing task of accurately fitting Jewelry images on Model images increasing the output of the Image-processing team from 100 images/day to 1000 images/day.

RESEARCH EXPERIENCE

EdgeVPN (Open Source), Adv. Computing & Info. Systems (ACIS) Lab

May 2020–Aug 2020

- Integrated latest stable version packages of Tincan and WebRTC to EdgeVPN (a P2P-based decentralized VPN software in C++ & Python). Tested & modified existing class methods as per the upgraded packages.
- Re-designed the WebUI and Webservice for the visual simulation of Software testing (Flask, React & Node).

Graph-to-text Representation, Data Science Research (DSR) Lab

May 2020–Aug 2020

- Implemented Variational Auto-encoder with Attention based Seq2Seq models to measure the accuracy of Sentence-Triples-Sentence conversion using *SpaCy*, *NLTK*, *OpenIE* & *pySpark* on large Wiki Dumps.

Hypotheses Generation, Data Science Research (DSR) Lab

Jan 2020–Apr 2020

- Designed evaluation metrics for Query Inferencing over DARPA provided Knowledge Base (KB) generating more coherent and generalized hypotheses using *pre-trained Embeddings* & *TF-IDF scores*.

PROJECTS

Unix-based Network File System (NFS), Principles of Computer System Design

Sep 2020–Dec 2020

- Emulated a fault-tolerant multi-server RAID-5 like RPC-based NFS with RSM locks for race-conditions.

Network Traffic Measurement, Network Data Streaming 📌

Sep 2020–Nov 2020

- Quantified packet-loss and examined sampling on b- and c-sketches (Bloom Filters, Active Counters, CountMin).

Database Engine, Database Systems Implementation

Jan 2020–Apr 2020

- Created a single-user Database Management System supporting SQL and relational-algebraic operations.
- Developed modules like DB Files with heap and sorting, and lexer-parser for query evaluation and optimization.

Ensemble Learning model for Optical Character Recognition 📌

Nov 2019–Dec 2019

- Enhanced the preprocessed input by extracting character contours using *shape-context descriptor algorithm*.
- Achieved ~96% recognition accuracy implementing KNN model fed with PCA-applied character images.

Tapestry-style P2P Network & Twitter Clone Simulation 📌

Sep 2019–Dec 2019

- Implemented the paper on '*Resilient Tapestry Overlay*' using DHTs with backpointers for a 10000-node net.
- Analyzed '*Gossip Algorithm*' on various network topologies of >8000 nodes. Evaluated twitting and querying on Twitter-clone by a 1000-actors net using Web-sockets, ETS Storage, and Phoenix framework.

SKILLS

- **Languages / Web:** Python, C++, Java, Scala, Elixir, Ruby, Go, JavaScript ES6, React, Node, HTML/CSS
- **Frameworks:** Django, Spring MVC, Docker, Junit, Kubernetes, REST, Flask, Gtest, DialogFlow, Jupyter
- **Database:** MongoDB, PostgreSQL, Kafka, Spark, ETL, MySQL, Cassandra, Airflow, AWS S3, Google Cloud
- **ML / NLP:** SpaCy, OpenIE, Numpy, Scikit, Pandas, NLTK, TensorFlow, PyTorch, OpenCV2, Matplotlib

LEADERSHIP & EXTRA-CURRICULAR

- **Mentor** (SwampHacks), annual hackathon at University of Florida 2020
- **General Secretary**, Design & Arts Society at IIT Jodhpur, elected by 1000 students 2013-2014
- **Chief Organizer**, 1st Robotics Summer Camp at IIT Jodhpur funding 8 interdisciplinary teams 2013
- **1st Runner-up** team in Micro-Air Vehicle (MICA-V) national competition by DRDO & NAL 2012-2013

ACHIEVEMENTS

Outstanding International Student Award by UF for continued involvement & contributions in Univ.

Nov 2020

#UdacityKPITScholar: Achieved Scholarship for 'Self Driving Car Engineer' nanodegree

May 2017