WINS GOYAL

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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, Data Streaming, Virtual Machines Computer System Design, Machine Learning, Projects in Data Science, Deep Neural Network

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 web-app - '***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

StereoCam Simulation /Firmwire Fuzzing, *Florida Institute of CyberSecurity (FICS)* — *Jan 2021–May 2021*

- Identified critical StereoCam applications and vulnerabilities by virtually simulating its behaviour. *(ROS, Gazebo)*
- Reverse-engineered security threats in 4G/LTE by sending fuzzed signals to an emulated base-station *(C, Angr.io)*

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*).

Long-term Traffic Forecasting, *Modern AI & Learning Technologies (MALT) Lab* — *May 2020–Aug 2020*

- Evaluated *attention-based Spatio-Temporal Graph-Convolutional Networks* to improve recall on predicting a long-term traffic behavior at city intersections by incorporating route connections & cause-and-effect scenarios.

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 *(BLEU score)* 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 — *Sep 2020–Nov 2020*

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

Neural Network Visualization — *Jul 2020–Aug 2020*

- Rendered a configurable *Convolutional Neural Network* using OpenGL - GLUT, controlled by keyboard/mouse.

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, AFL++, C, Go, Elixir, JavaScript, React, Node, HTML/CSS*
- **Frameworks:** *Django, Ghidra, Gtest, CUDA, ROS, OpenGL, Kubernetes, Docker, DialogFlow, Gazebo*
- **Database:** *MongoDB, PostgreSQL, Kafka, Cassandra, MySQL, ETL, Spark, Airflow, AWS S3, Google Cloud*
- **ML / NLP:** *SpaCy, Numpy, Scikit, Pandas, NLTK, TensorFlow, PyTorch, OpenCV2, PlantCV, MATLAB*

LEADERSHIP & EXTRA-CURRICULAR

- ***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 (MICAV)* national competition by DRDO & NAL — *2012-2013*
- Deployed a low-cost *PV-panel Cleaning Robot*, Solar Park, Phalodi *(Larsen & Turbo)* — *2012*

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*

Projects *- Lane Tracking, Extended Kalman Filter, Particle Filter, Transfer Learning, PID Controls*