SriSai Naga **Jyotish** P

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Education

IIIT Hyderabad — **Hyderabad, IN**
B.Tech(H) + M.S by Research in Electronics and Communication Engineering — *2016–2020*
Focus on optimization, optimal control and applications in robotics

Work Experience

Student Systems Administrator — **Hyderabad, IN**
IIIT Hyderabad — *May 2017–Present*

- Responsible for maintenance and deployment of institute-wide infrastructure and services (Squid, LDAP, Email, lists, NS, CAS, PXE, etc), 802.1x over network, routing and firewall configuration serving ~3000 users.
- Available 24/7 on-call for all incident response and remediation.
- Automated server configuration for institute's **reverse proxy** server that serves over 150 domains.
- Automated one of the **mail server migration** to Google Suite.
- Deployed **transparent proxy** with SSL interception using **SNI parsing**.

Systems Administrator — **Hyderabad, IN**
Robotics Research Centre, IIIT Hyderabad — *Mar 2018–Present*

Responsible for the maintenance and deployment of centre's high performance computing cluster and various services (Monitoring, NS, LDAP, Git, etc) of the centre.

Projects

Notable Projects

Poisson Image Editor — Image Processing | Python

- Image editing tasks posed as optimization problem using differential equations and gradient fields.

Internet Relay Chat (IRC) — Distributed Systems | Socket Programming | C++

- A simple implementation of IRC client-server in C++.
- Supports multiple chatrooms with multi-threaded backend.

Unrolling the Shutter — Machine Learning | Computer Vision | Python | Tensorflow

- A CNN that corrects the distortion caused due to rolling shutter of the camera from a single image.
- Tried different approaches to improve the results of the existing models.

High Availability Directory Server — Systems Administration

- A highly available LDAP service for a HPC cluster built using OpenVZ and FreeIPA.

Everybody Dance Now — Machine Learning | Computer Vision | PyTorch

- Human motion transfer from source video to target video using Generative Adversarial Networks.

Chord DHT — Distributed Systems | Go

- Distributed hash table implementation using Chord protocol to download and upload files from a cluster.
- The algorithm uses a consistent hashing scheme and finds the files on the nodes in *log(n)* complexity.

Neural Captioning — Machine Learning | Computer Vision | NLP | Python | Tensorflow

- A combination of a CNN (trained on image net) and an LSTM networks that gives a caption for the given input image.
- Implemented different versions of the network by tweaking LSTM's architecture
  • Traditional LSTM • With attention • With sentinel gate.

Location Forensics using Power Signatures — Machine Learning | MATLAB

- Identify the geographical power grid location by analyzing the power signatures in the media recordings.
- Feature extraction using SFFT, wavelet decomposition and trained multi-class SVM for classifying the locations.

Other Selected Projects

- **Transparent Proxy** that serves ~3000 users. — Go
- **Highly Available Distributed Storage** for HPC. — GlusterFS | Systems Administration
- **Accounts Management Portal** inspired from accounts.google.com. — Python | Django
- **HTTP Proxy Server** written in Python with multi-threading. — Socket Programming | Python
- **Peer to Peer File Sync** A P2P file sharing and syncing client-server. — Python
- **Autonomous Navigation of Quadrotors** — ROS | C++ | Python
- **Reactive obstacle avoidance with Quadrotors** — ROS | C++

Research

Undergraduate Research

Guide: Dr. K. Madhava Krishna, Robotics Research Centre, IIIT Hyderabad
Interest Areas: Optimal control, Probabilistic Motion Planning, Reinforcement Learning

Projects

- **Probabilistic Navigation under Non-Parametric Uncertainty**
  Mentor: Bharath Gopalakrishnan, Guide: Dr. K. Madhava Krishna
  - Characterizing robot and obstacles as noise samples from a non parametric distribution.
  - Moment matching of distributions in Reproducing kernel Hilbert space (RKHS) using reduced sets.
  - Alternate implementations using important sampling, EV Gauss methods.

Selected Coursework

- Digital Image Processing
- Statistical Methods in AI
- Computer Vision
- Mobile Robotics
- Advances in Robotics
- Distributed Systems
- OS and Algorithms
- Communication Networks
- Principles of Information Security
- Optimization Methods

MISC

- Invited to Dean's Dinner 2017-18
- Club Coordinator, Photography Club, IIIT Hyderabad — 2017-2018
- Systems Administrator, Felicity 2018 — 2018
- Photographer, Media Team, IIIT Hyderabad — 2016-2017

Skills

Advanced

Linux System Administration • Python • Shell • MATLAB • Django • Laravel

Intermediate

Docker • Libvirt • OpenVZ • LDAP • EMail Suites • Monitoring • C/C++ • Go • JS • Ruby • PHP
nodeJS • Slurm • Networking • ROS • Gazebo • Computer Vision • Machine Learning

Familiar

Lua • Unreal Engine • Windows Administration