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Education

IIIT Hyderabad   **Hyderabad, IN**
B.Tech(H) + M.S by Research in Electronics and Communication Engineering   *2016–2020*
With specialization in Robotics
CGPA: 7.71

Work Experience

IIIT Hyderabad   **Hyderabad, IN**
Student Systems Administrator   *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.
- 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**.

Robotics Research Centre   **Hyderabad, IN**
Systems Administrator   *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..

- **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.

- **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 Convolutional Neural Network 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.

- **Guest Accounts Management**   Python | Django
  - Portal for automation of adding guests to institute's LDAP.
  - Custom audits to restrict the logins of the guest users to access only the institute network but not rest of the services.
  - Automating account deletion from the LDAP.

Other Selected Projects..2/2

- **Transparent Proxy** that serves ~3000 users. Go
- **Accounts Management Portal** inspired from accounts.google.com. Python | Django
- **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
Areas: Motion Planning, Autonomous Navigation, Trajectory Optimization

Projects..

- **Probabilistic Navigation under Non-Parametric Uncertainty**
  Mentor: Bharath Gopalakrishnan, Guide: Dr. K. Madhava Krishna
  - Characterizing robot and obstacle as noise samples from a non parametric distribution.
  - Moment matching of distributions using Reproducing kernel Hilbert space (RKHS).
  - Efficient implementation using reduced sets.

Publications..

- **Reactive Navigation under Uncertainty through RKHS Embedding of PVO** (under review), Bharath Gopalakrishnan, Bhargav, Jyotish, Arun Kumar Singh, K. Madhava Krishna, Dinesh Manocha, **ICRA 2019**

Selected Coursework

- Distributed Systems*
- OS and Algorithms*
- Principles of Information Security
- Programming Workshop
- Statistical Methods in AI
- Computer Vision
- Communication Networks
- Mobile Robotics
- Advances in Robotics

Skills

Programming/Scripting..

Regular: C • C++ • CSS • JS • Matlab • PHP • Python • Shell
Familiar: Go • Java • Lua • MySQL • Ruby

Libraries/Frameworks..

Robotics: Gazebo • OpenCV • ROS • Unreal Engine
Web: AngularJS • Django • Flask • Laravel • nodeJS • Rails
Machine Learning: PyTorch • Tensorflow • Torch

Systems..

Nginx • Apache2 • LDAP • Postfix • Dovecot • Nagios • Icinga • Bind • Slurm • Docker • Libvirt
OpenVZ • Wazuh • Snort • Squid • iptables

Operating Systems..

Linux • Windows