

Manikandan Lapasi

SOFTWARE DEVELOPER · SITE RELIABILITY ENGINEER

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Education

Georgia Institute of Technology

M.S. IN COMPUTER SCIENCE (Aug 2022 - Present)

Atlanta, Georgia

GPA : 4.00 / 4.00

Courses: Computational Data Analytics, Data Visualization and Analytics, Database Systems, Knowledge-based AI

Indian Institute of Technology Madras

M.TECH IN ROBOTICS (July 2015 - May 2020)

Chennai, India

GPA : 3.80 / 4.00

Courses: Computer Vision, Smart Buildings and Automation, AI in Manufacturing, Mechatronics System Design

Maharishi International Residential School

COMPUTER SCIENCE - CBSE (JULY 2013- MAY 2015)

Chennai, India

GPA : 4.00 / 4.00

Skills

Languages Python, C++, R, Powershell, SQL, NodeJS

Tools Docker, Terraform, Ansible, Kubernetes, Grafana, Prometheus, Matlab, Azure

Frameworks Tensorflow, Flask, Django, ReactJS, D3, MongoDB, Neo4j

Work Experience

Honeywell International

Bangalore, India

SITE RELIABILITY ENGINEER | ADVANCED SOFTWARE ENGINEER

Aug. 2020 - Aug. 2022

- **Site Reliability Engineer (SRE)** focal for org-wide authentication and authorization flow, and for IoT cloud services.
- **IoT** - onboarding new IoT devices, and enabling secure communication between devices over cloud.
- **Monitoring** - exposed metrics from applications, containers and virtual machines. Set up synthetic monitoring to monitor end-points with high frequency using **Selenium** drivers, thereby reducing Time-To-Response during outages.
- **Visualisation** - set up dashboards on **Grafana** for visualising the metrics exposed by the tech-stack.
- **Infrastructure as Code (IAC)** - used **Terraform** to provision cloud resources, virtual networks and set up proxy firewalls.
- **Configuration as Code (CAC)** - programmed **Ansible** runbooks to configure infrastructure resources.
- **Containerization** - deployed applications through **docker** containers on Openshift.
- **Maintenance** - automated cleanup and maintenance activities on the database using python and related SQL packages.
- **Automation** - customer suite onboarding (**flask** back-end + **reactjs** front-end), saving approx. 600 man-hours over 3 months.

GreyOrange Robotics

Delhi, India

SOFTWARE DEVELOPMENT INTERN - R&D

May 2019 - July 2019

- Worked on path-planning algorithms for GreyOrange's flagship Butler robot, used for warehouse management tasks.
- Improved time complexity of path calculation algorithms by implementing **binary-heap based data structure**, reducing time complexity from linear to log, thereby saving approx. 300 hours of computation time over 2 months.
- Implemented real-time plotting and predictive plotting of the robot's intended path, using Python.

Projects / Publications

IEEE / ICUAS - Path planning for Unmanned Aerial Vehicles

Chennai, India

RESEARCH PROJECT

Jan 2019 - July 2020

- Combined **Obstacle Avoidance** and **Target Interception** concepts to come up with 3 different algorithms.
- Paper published by IEEE - M. L.P and S. Ghosh, "Online Hybrid Motion Planning for Unmanned Aerial Vehicles in Planar Environments," 2020 International Conference on Unmanned Aircraft Systems (ICUAS), 2020, pp. 1533-1540.

SpaceX - Hyperloop Pod competition

Hawthorne, California

RESEARCH PROJECT

Jan. 2018 - May 2020

- Programming control strategies of Motors and Drives for a prototype hyperloop pod.
- Team lead for the propulsion subsystem. Computational Programming to solve tightly coupled differential equations - deriving kinematic curves and dynamic analysis of a prototype hyperloop pod for high speeds(over 300 kmph).
- Only Asian team at the 2019 **SpaceX Hyperloop Pod competition**, finished 10th of 1500+ teams.

Image Captioning

Chennai, India

COURSE PROJECT - GRADE : A

July 2019 - Nov 2019

- Programmed a **Deep Learning Neural Network** for image captioning, with BLEU scores to measure accuracy.
- Model consisted of a **Convolutional Neural Network (CNN)** for feature extraction, over a **Long Short-Term Memory (LSTM)** layer for captioning, with an accuracy of 85%. Trained and cross validated on Flickr30k and MS-COCO datasets.

Extracurriculars

- Finalist for the Indian National Mathematics Olympiad (INMO) and the Indian National Physics Olympiad (INPhO). 2014
- Recipient of Indian national scholarships (NTSE 2013 - top 1000 of 50k students, KVPY 2015 - top 1000 of 1 million students).