

Nihal Dhamani

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 www.nihaldhamani.com

EXPERIENCE

NASA JET PROPULSION LABORATORY

MARS2020 GDS SOFTWARE ENGINEER (PART-TIME)

November 2018 - Present | Remote

- Developed and tested a multi-threaded file sync tool in Go to automatically sync the latest objects created on AWS S3 buckets to the local file system
- Developed a Pip package to improve efficiency of a custom single sign-on proxy

MARS2020 GDS SOFTWARE ENGINEERING INTERN

May 2018 - August 2018 | Pasadena, CA

- Developed a CLI tool for LDAP security group management
- Established an endpoint health monitoring system hosted on AWS making use of various technologies including Docker and ElasticSearch

TEXAS SPACECRAFT LABORATORY

SEEKER R&D

January 2019 - Present | Austin, TX

- Architected and developed an end-to-end ML pipeline capable of running entirely on AWS.
- Formalized various approaches to achieve on-orbit pose determination using a monocular camera.

SEEKER1 ML/CV LEAD

September 2017 - May 2018 | Austin, TX

- Formulated, implemented, and tested machine learning and computer vision algorithms for NASA JSC's Seeker CubeSat Mission.
- Developed multi-threaded video processing capable of running on low-cost flight hardware software to extract orbital information from a spacecraft.
- Final system launched on Cygnus NG-11 in April 2019.
- Paper submitted to SciTech 2020 Conference and awaiting decision.

METECS

ENGINEERING INTERN

May 2017 - August 2017 | Houston, TX

- Designed, implemented, and tested a voice user interface system for an inventory tracking system that is deployed on the International Space Station.
- Created a real-time inventory tracking website with RFID sensor data.

PROJECTS

HIGHWAY LANE RECOGNITION : Developed a robust image processing pipeline for detecting, identifying, and calculating curvature of a highway lane in an image. Achieved successful lane recognition for multiple vehicle dashcam videos.

EMOJI PREDICTOR : Scraped Twitter emoji data and trained multiple ML models including LSTMs and CNNs in order to predict the emoji representation of a sentence.

RAVENML : Architected an open-source Python CLI tool to serve as a full ML training pipeline. Integrated TensorFlow to create a CNN plug-in for efficient model training.

BRAN : Developed a CLI tool to automatically create and SSH into an EC2 instance given user settings. Automatically sets up the environment needed to run ravenML.

BEHAVIORAL CLONING SELF-DRIVING CAR : Developed an ML model in Keras to drive a simulated car around track through use of behavioral cloning.

TRAFFIC SIGN CLASSIFIER : Wrote a custom and slightly modified implementation of the LeNet architecture in TensorFlow to develop a German traffic sign classifier.

WAILA : Wrote a real-time object detector Android application that provides functionality to learn more about the object and save it as a memory.

EDUCATION

THE UNIVERSITY OF TEXAS AT AUSTIN

B.S. COMPUTER SCIENCE

ML/AI Concentration

B.S.A. ASTRONOMY

MIDDLE EASTERN STUDIES MINOR

Expected Dec 2019 | Austin, TX

JOHN FOSTER DULLES HS

Grad. May 2015 | Sugar Land, TX

SKILLS

PROGRAMMING

Proficient:

Python • Java

Working Knowledge:

Go • C/C++ • MATLAB • SQL • CSS

Bash • HTML • PHP • JavaScript

TECHNOLOGIES

OpenCV • TensorFlow • AWS • Keras

PyTorch • NumPy • Pandas • Boto3

Docker • Flask • Android Studio • Git

MISCELLANEOUS

Project Management • Technical Writing

COURSEWORK

Udacity Self-Driving Car Nanodegree

Computer Vision

Artificial Intelligence

Natural Language Processing

Data Mining

Software Engineering

Data Structures

Algorithms

Operating Systems

Computer Architecture

Mobile Computing

Statistics and Probability

Linear Algebra

ACTIVITIES

TEXAS BLAZERS

VICE CHAIR OF COMMUNITY

SERVICE | SEPT. 2016 - PRESENT

Service organization devoted to serve UT Austin and the surrounding community