# Allegra Nichols

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**Objective**

A motivated engineer offering creativity, critical thinking, quick learning to add to a progressive forward-thinking company.

**Education & Certifications**

**Nanodegree**, Self Driving Cars — **Mar 2020 – Sept 2020**
**Udacity**

**Nanodegree,** Intro to Self Driving Cars — **Feb 2020**
**Udacity**

**Certificate**, Control of Mobile Robots — **Jun 2019**
**Georgia Institute of Technology on Coursera**

**Bachelor of Science**,Computer Engineering — **Apr 2016**
**Florida A&M University, Tallahassee, Florida**

**Project Experience**

**Traffic Light Classifier - Developer** — **May 2020**
*Udacity, Austin, TX*

- Designed with TensorFlow, deep and convolutional neural networks, LeNet
- Utilized computer vision techniques to transform images for classification
- Achieved approximately > 95% recognition accuracy

**Advanced Lane Finding - Developer** — **Mar 2020**
*Udacity, Austin, TX*

- Designed with advanced computer vision techniques; color transforms, gradients and perspective transforms
- Implemented a detection algorithm using a sliding window and search technique
- Utilized a tracking class for each lane line to record important line information

**Route Planner - Developer** — **Dec 2019**
*Udacity, Austin, TX*

- Implemented using A* Search algorithm to find the shortest path between two points on a map
- Utilized data structures - sets and dictionaries to avoid unnecessarily slow lookups
- Applied an admissible heuristic (straight line) to ensure the direct path to the goal is being considered.

**Autonomous Ground Vehicle – Engineer & Developer** — **Jul 2019 – Present**
*Self-Startup, Austin, TX*

- Built an autonomous ground vehicle using a pre-fabricated chassis
- Using sensor fusion to interface RPLIDAR and Pixy Cam with Raspberry PI Model B+ for object detection and localization
- Interfaced motor controllers with Arduino Mega to control speed through pulse width modulation
- Utilizing ROS to broadcast and receive data from sensors for decision making
- Implementing a control system with feedback and feedforward loops

**Global Warranty Reporting – Lead** — **Jun 2018 – Jul 2019**
*General Motors, Austin, TX*

- Manage reporting needs for over 1000 end users for all vehicle warranty data in general motors
- Collaborated with business partners to design and implement report solutions to satisfy data needs
- Analysis and solve data discrepancies and drive to a solution all business partners agree on

**Work Experience**

**Samsung Austin Semiconductor, Austin, TX** — **Aug 2019 – Present**
**Automation Engineer**

- Lead engineer in charge of server upgrading, testing, validation and maintaining automation database infrastructure
- Create web dashboards and applications to monitor key automation performance metrics of high volume manufacturing environment
- Develop complex ETL Oracle SQL queries, procedures, triggers and views to source sensor data from the FAB
- Lead projects related to improvements in database early warning detection system

**General Motors, Austin, TX** — **Jun 2016 – Jul 2019**
**Software Developer**

- Create automated batch scheduling jobs using CA Autosys
- Design custom reporting solutions using IBM Cognos 10.2
- Utilize complex SQL to validate, test, troubleshoot data and create oracle database tables
- Develop ETL code using IBM Infosphere Datastage 10 and 11

**Skills.**

Python, C++, SQL, AutoCAD , Databases (Oracle 10g -19c, SQL Sever 2002) , ROS , Labview, Matlab, Linux, Unix, Jira, Confluence, Tensorflow, Anaconda, OpenCV

**Additional Links**

**Github Pages:** https://allegranicp.github.io