XINQIAN (Vivian) XIANG

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Graduation Portfolio | https://xiangxinqian.wixsite.com/portfolio

WORK EXPERIENCE

Advanced Product Engineer | July 2016 - now
Borgwarner , Auburn Hills

- Led product development from concepts to prototype with rich experience in ideation, simulation analysis, mechanical design, and bench/vehicle testing.
- Designed and developed mechatronic products used in transmission system.
- Responsible for implementation of Customer Specific Requirement per OEM as required.
- Designed using a phase-gate process from Requirements through Production Release.
- Tracked technology trend and benchmark similar products.
- Created and Maintain project DFMEA, DVP&R and project timing.
- Performed FEA to determine stress and strain using Inventor Simulation.
- Built simulation model for dynamic system analysis with MATALB Simulink.
- Quickly learned and constructed model for design, simulation and analysis of driveline systems and drivetrain energy consumption using SMT MASTA SUITE.
- Cooperated with multi-function groups for system level evaluation and product development.
- Built and tracked product BOM for cost estimation and reduction.
- Developed strong understanding of standard and geometric tolerance.
- Built excellent documentation skills using MS Office Tools.
- Communicated with suppliers for component and system integration in the US, Europe and China.
- Supported customers and Sales group in pursuing new business.
- Supervised others' work in sub-system/component design.
- Patents:
  - Electronic clutch actuator | US20180172084A1
  - Electronic clutch actuator with manual override piston | US US20180172086A1
  - System and method for clutch actuation having electronic clutch actuator with integrated manual operation | US20180172087A1

COURSE PROJECTS

Traffic Light Classifier [Python] | Summer 2019
Online Course: Intro to self-driving car - Udacity

- Loaded and standardized traffic light pictures, and specified pictures with one-hot encoded labels for "red", "yellow", and "green".
- Extracted brightness feature using HSV color space to convert original RGB color space.
- Modeled traffic light classifier to identify traffic light signal with 1484 training sets and achieved 95.0% of accuracy on 298 testing samples.

Image Recognition [Python] | Spring 2019
Online Course: Neural Networks and Deep Learning - Coursera

- Built a character recognizer identifying cat vs non-cat images, given a training set of 209 example pictures.
- Achieved 72.0% accuracy with a two layer neural network using logistic regression on 50 testing samples.
- Improved the accuracy to 96.5% with a four layer model using gradient descent and learning rate decay.

ROBOCKEY Tournament 2015 (AWARD: 3rd Place out of 33 teams) | Fall 2015

- Constructed electro-mechanical systems for three autonomous hockey playing robots.
- Designed and modified mechanical structure of robot in SolidWorks.
- Manufactured prototypes using laser cutting, 3D printing and machining.
- Tested robustness of robots with different mechanical structures and materials.
- Gained work experience with team management.

EDUCATION

University of Pennsylvania
Master of Science in Engineering
Focus: Design and Manufacturing
May 2016, Philadelphia, PA

Huazhong University of Science and Technology
Bachelor of Science in Engineering
Jun 2014, Wuhan, China

ONLINE COURSES

Object-Oriented Data Structures in C++
Coursera
April, 2020

Intro to self-driving cars
Udacity
August, 2019

Neural Networks and Deep Learning
Coursera
May, 2019

SKILLS

Software
Autodesk Inventor
MATLAB/Simulink
SolidWorks
dSpace Control Desk
ANSYS
FMEA
Microsoft Office
SMT MASTA SUITE

Languages
C/C++
Python
Matlab

Fabrication
Manual / CNC Lathes
Manual / CNC Mills
Injection Molding
Laser Cutting
Metal Forming
3D Printing
PCB Design
Mold Making
DFM & DFA
Soldering
Casting