

# ZHENYE NA

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## EDUCATION

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### University of Illinois at Urbana-Champaign

May 2019

Master of Science, Industrial Engineering in Advanced Analytics  
Concentration in Computational Science & Engineering

### Dalian University of Technology

July 2017

Bachelor of Engineering, Harbor, Waterway and Coastal Engineering

## SELECTED PROJECTS

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### Self-driving Vehicles Simulation using Machine Learning (PyTorch, OpenCV)

Feb. 2019 - Present

<https://github.com/Zhenye-Na/self-driving-vehicles-sim-with-ml>

- Applied "End to End learning" concept to train Self-driving car simulator
- Augmented center, left and right images from 3 cameras and recorded steering angle, speed, brake and throttle
- Predicted steering angle by training RNN model and CNN model with ELU activation function to solve vanishing gradient problem
- Gathered different sets of training data in two terrains and generalized as one model

### Kaggle Competition: Humpback Whale Identification (Keras, PyTorch, fast.ai)

Dec. 2018 - Feb. 2019

- Top 20% solution using Siamese Net and DenseNet-156 architecture with Data Augmentation, Bounding Boxes prediction and Ensemble methods

### Deep Reinforcement Learning - Flappy Bird Hack (OpenCV, PyTorch)

Nov. 2018 - Dec. 2018

<https://github.com/drl-dql/DQN-Flappy-Bird>

- Applied CNN to extract features of Flappy-Bird game and trained multiple agents using Double DQN
- Analyzed effects of different parameters settings and optimizer choices made on trained agents based on training reward and loss
- Concluded ~ 30 reward scores and ~ 1 min playing duration

### Image Similarity using Deep Ranking (Python, PyTorch)

Oct. 2018 - Nov. 2018

<https://github.com/Zhenye-Na/image-similarity-using-deep-ranking>

- Implemented Siamese Network by using pre-trained ResNet-101 model on ImageNet for Deep Ranking
- Integrated with image query API for interactive image searching and displaying
- Proved that Multi-scale Network model could be replaced by a ResNet-101 model

## WORKING EXPERIENCE

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### Data Analyst Intern

Sept. 2016 - Nov. 2016

Dalian Highway Construction Group

Dalian, China

- Evaluated highway maintenance cost based on factors like traffic weight, bridge/tunnel ratio and so forth
- Adapted Linear and Nonlinear Regression model in SPSS and the model error is within 10%
- Created data visualization in Excel for Cost Manager by using VBA
- Optimized road maintenance cost by 20% based on the appraisal factor model

## TECHNICAL SKILLS

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Languages	Python, Java/Scala, MATLAB, SQL, Shell scripting, JavaScript, C/C++, Go, Julia
Frameworks	Tensorflow, Pytorch, Keras, fast.ai, REST
Tools	MySQL, MongoDB, MariaDB