

Yang Yuan

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Professional Summary

Motivated master student with a focus on artificial intelligence, committed to making meaningful contributions to the field. Eager to engage in cutting-edge research, collaborate with esteemed professionals, and contribute to the ongoing progress of machine learning and computer vision.

Work Experience

Internship | Nullmax | Shanghai | China

June 2019 – Aug 2019

End to end learning (<http://blog.leanote.com/post/hljyy96@126.com/e2e>)

- Core technology: **CNN + Variational Gaussian Mixture Model + Open Street Map (OSM)**
- Reproduced a comprehensive visual solution for self-driving cars, achieving driving behavior comparable to that of humans based on ICRA 2019 best paper. Implemented an **end-to-end** system, encompassing image input, control prediction, and real-time map integration.
- Designed and implemented a CNN and **GMM**-based network, leveraging inputs from forward and side cameras, as well as real-time map images. The model produced precise **curvature** values, which can be used for direct vehicle control. Achieved **r2 score** of **0.86** and visualized the results using **Bezier curves**.
- Significantly minimized reliance on lane detection, obstacle detection, and route planning systems, reducing computing dependencies for high-precision facilities like U-blox and RTK.

Academic Project

Kaggle Project | Pittsburgh | PA

Feb 2019 – Mar 2019

Santander Customer Transaction Prediction

- Core technology: **XGBoost + LGBM + K-fold cross-validation + Python + AWS**
- Constructed a robust model using 200 selected features to accurately predict and classify customer payment behavior.
- Utilized **XGBoost** and **LightGBM** to train and optimize the models, comparing their performance in terms of prediction accuracy, classification metrics, and computational efficiency. Deployed on **AWS**.
- Utilized feature engineering to generate additional features to perform an **ensemble** approach, increased the prediction accuracy and finally placed within the top **7%**.

Kaggle Project | Pittsburgh | PA

Oct 2018 – Dec 2018

Understanding the Amazon from space

- Core technology: **convolutional neural network (CNN) + Keras**
- Utilized a convolutional neural network implemented with **Keras** to accurately classify multiple geomorphological features in a dataset of over 40,000 images, achieving a high F2-score of **0.91**.
- Enhanced the traditional CNN model by incorporating advanced techniques such as **ELU** activation and **Optimizer-Nesterov Accelerated Gradient**, resulting in improved model performance.

Certifications

AWS Certified Developer – Associate

AWS Certified Solution Architect - Associate

Education

University of Pittsburgh, Pittsburgh, PA

Aug 2018 – Apr 2020

Master of Science, Information Science, GPA: 3.6/4.0