Norman, OK
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Yuchao Jiang

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Google Scholar

Objective: Data Scientist/Machine Learning/Software Engineer

Skills

- Programming languages: C++, Python, Matlab, Java, JavaScript
- Machine Learning: PCL, feature engineering, regression, classification, clustering
- Deep Learning: CNN, RNN, LSTM, GAN, object detection, segmentation, natural language processing
- Computer Vision: Canny edge detection, Hough space transform, HOG, perspective transform
- Familiar with Scikit-learn, TensorFlow, OpenCV, PCL, ROS, SQL, NoSQL, Hadoop
- Experience with satellite image processing: cloud masking, atmospheric motion vector

Work Experience

Data Scientist, Weathernews American Inc., Norman, OK 11/2017 - now

- Wrote Python and C++ codes to process satellite data (NetCDF, wgri2 and binary formats) for practical use
- Developed cloud mask algorithm using spectrum property of each satellite band. This work is used in the data assimilation, essential for improving the accuracy of Numerical Weather Prediction (NWP) models
- Developed machine learning models to postprocess NWP data for aviation forecast, achieved F1 score comparable to human forecaster. This work significantly improved the productivity of aviation forecast.
- A 15-min presentation "Can machine learning provide a shortcut to fog prediction?" has been accepted at 18th Conf. on Artificial Intelligence and its Applications to the Environmental Sciences, Phoenix, Jan 2019

Project Experiences

Machine Learning Engineer, University of Oklahoma, Norman, OK 08/2016 – 07/2017

- Designed a Hadoop database, consolidated 10 TB data using Hive and Java
- Implemented Kalman Filter algorithm in C++ for sensor fusion, and particle filter algorithm for localization
- Implemented PID and predictive models to control the vehicle, A* search for path planning
- Produced a demo video (https://youtu.be/w15GpupQusM), which uses computer vision to identify lane line and calculate curvature, and uses deep learning to localize other vehicles on the highway.
- Developed a 3D pointcloud object detection algorithm using multiple filters, Euclidean clustering and SVM

Research Assistant, University of Oklahoma, Norman, OK 08/2010 – 05/2016

- Built numerical models to design waveguide and quantum structures of semiconductor lasers
- Benchmarked the hardware testing process and automated the data collection using Labview
- Improved the performance of mid-infrared lasers that was installed in Mars Curiosity Rover detect Methane
- Reviewer for 4 high-impact journals, authored 15 papers(citations 170), hold 2 patents on laser technologies, gave 2 oral presentations at CLEO (San Jose), 1 breakthrough was highlighted in Nature Photonics

Education

Ph.D., Electrical and Computer Engineering, University of Oklahoma, Norman, OK 05/2016

Relevant courses: data structure, machine learning, deep learning, artificial intelligence, robotics