

# OCEAN WONG

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## EDUCATION

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**Heilongjiang Bayi Agricultural University**, HeiLongjiang, China Sep. 2011 - June. 2015  
*B.Sc. in Information and Computing Science*

## HONORS AND AWARDS

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- *Competition Expert Tier. TOP 0.67%(1072/159,193)* Dec 2019
- *Solo Silver Medal, PB Top 6%(30/546)* Lyft 3D Object Detection for Autonomous Vehicles Kaggle Competition Dec 2019
- *LB Top 7%(182/2427); PB Top 13%(301/2427)* Severstal: Steel Defect Detection Kaggle Competition Oct 2019
- *Solo Silver Medal* APTOS 2019 Blindness Detection Competition Kaggle Competition Sep 2019
- *First Class* Professional Scholarship Apr. 2014
- *2<sup>nd</sup> Prize as team leader* China Undergraduate Mathematical Contest in Modeling(CUMCM), China Sep. 2013
- *1<sup>st</sup> Prize as team leader* Northeast Undergraduate Mathematical Contest in Modeling, HeiLongJing, China May. 2013

## EXPERIENCE

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**Beijing Sphyrna Technology Co., Ltd.** BeiJing, China June. 2015 - Present  
*Artificial Intelligence Algorithm Engineer*

**Blind Spot Detection Projects** Feb. 2020 – Present  
*Python, Darknet, Pytorch, Linux*

Brief introduction: The BSD system detects other vehicles and pedestrians in the blind area, and warns to help the driver to drive safely. Provides the driver with visual and audial warning when parking or lane changes

- Designed clean and analysis fisheye image data system(label image data is an boring and laborious job; I designed an auto label system, and the Efficiency increased by 90% ).
- Designed and trained our detection model on our fisheye image data.
- Optimized our detection model, we wanted to Run algorithms in real time on low end chips(Allwinner T5). So I need trim our model, reduced Model parameters from 1.22M to 0.3M, reduced Model calculation from 1.2 BFlops to 0.139 BFlops, Increased model mAP from 90% to 95%

**Rover robot** Dec. 2019 – May. 2020  
*Python, ROS*

Brief introduction: Rover robot uses senses(radar, IMU, and Odometry) , which enable robot build maps, avoid obstacles automatically and cruise at fixed points

- Designed robot chassis.
- Designed Unicycle Robot Model.
- Used Odometry to Track Robot Movement.
- Deployed google-cartographer, ros-navigation algorithm on rover robot.

**Driver Status Monitor Projects** Jan. 2019 – Dec. 2019  
*Python, Caffe, Linux*

Brief introduction: Driver Status Monitor uses a camera to capture an image of the driver's face and establishes the driver's condition based on visual analysis. It detects carelessness, distraction and drowsiness, Smoking, Phone and then alerts the driver of any potential danger.

- Designed driver face, key points and behaviour detection neural networks.
- Implemented driver face, key points and behaviour detection neural network by caffe.
- Trained a big neural network to label and clean our driver image data.
- Used our labeled data to train our neural networks.
- Optimized training Strategies(implemented Online Hard Example Mining algorithm), Accuracy increased from 98% to 99.3%.
- Optimized detection Strategies(used Optical flow algorithm), speed increased from 5HZ to 26HZ; Increased 5 times, so we can run our model on embedded system(Rock Chip RK3399).

## TECHNICAL SKILLS

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- Programming Languages: Python == Java > C++
- Platform: Linux, MacOS
- Development: Neural Network, Data Analysis

## OTHER PASSIONS

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- I enjoy travelling around the world, talking with people who came from different culture and world, and learn about different aspects of our world.
- I like solving problems and helping others; during work time, I would like to help my colleagues with software problems and algorithm bugs.
- I also enjoy reading books, especially Biographies and investment books
- I'm really into wild nature, I would like to try my best to protect our planet. buy less packaging products, Do not use plastic bags as far as I can.