CV in self-driving cars, face recognition, GAN

SNN（脉冲神经网络）

CNN

1. Data：Augmentation, Selection Strategy
2. Network: Initialization strategy, learning strategy, optimization strategy, framework-modeules, Layers.
3. Loss: Loss type, loss selection, update strategy, evalution

CV

1. low level: 从图像能直接得到的信息，basic operations
2. mid level：链接high level和Low level的桥梁，feature extraction
3. high level：bounding box，从2维怎么构建3维信息，real CV tasks by using CNN

Fantastic Transformation, Style Transfer, Image Generation, 2D To Depth, 3D objects from 2D, Slam

pandapow

Research: AutoML, Acceleration,

Applications: **Image**/Video Classification, Object Detection, Keypoint Detection, **Recognition**, **Segmentation**, Voxcel, Tracking, 2D-3D/3D-2D, Image Captioning, **Image Transfer**, Mixed Inputs, GAN, Slam.

Engineering: Modified Models, **Light Models,** Accelerating Algorithm

Python主要针对有research意愿的人。**C++**主要针对有工程意愿的人。

Caffe、**PyTorch**上手快

**Coding Preparation**: 200/300+题，medium难度40min做对4/5道，Lintcode/Leetcode

LintCode：<https://www.lintcode.com/problem/> 账号：wjq332608421 密码：wjq613613

Tiny Project, Kaggle：Cancer Detection, Cactus Identification, Protein Atlas Image Classification.

Reflection Removal, Super Resolution, Face Frontalization, Add/Remove Sth

Video -> Sound, Video + Sound -> Classification, 2-Stream Videos -> Classification

CVPR, ECCV, ICCV – 偏应用

NIPS – 偏理论

PAMI – 顶刊，较滞后

SIGGRAPH, arXiv, Kaggle

冈萨雷斯-《数字图像处理-第三版》

合恩-《矩阵分析》

Bishop-《Pattern Recognition and Machine Learning》