ZHENGHAO PENG

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EDUCATION

Shanghai Jiao Tong University Zhiyuan College (enrolled in 2015)
Got Zhiyuan Honors Scholarship for 2 years

University of California, Berkeley (2017 Summer)

SKILLS

Mainstream deep learning framework like: Tensorflow, Keras etc.

Major programming language like: Python, C++, Matlab etc.

LaTex writing, project management, and other abilities for research

RESEARCH EXPERIENCE

An End-to-end neural network based approximate computing*

This work was accepted as 2018 DAC Poster. I proposed an novel end-to-end NN to fuse the two network (approximator and classifier) on tradition method, which shrink the scale of parameters while maintain the performance. Recently, revised version of this work has been submitted to ICCAD 2018.

3D routing on integral circuits by multi-agent reinforcement learning (ongoing)

This work (is attempted to) transform a 3D routing problem to a sequential decision making problem and thus can be tackled by Multi-agent reinforcement learning technic and achieve optimal routing policy. This work is ongoing.

Neural network based recognizer of handwritten arithmetic expression

An practice of Tensorflow, CV2 package, and transfer learning, which support receiving image from WeChat and, after recognizing arithmetic expression, return calculation result.

PROJECT EXPERIENCE

Autonomous tracking trimaran

I designed a tracking and control algorithm to let a real trimaran cruise along a given track. This is a practice of control theory, tracking algorithm and large program development.

Trend of future oil tanker market

I predicted future oil tanker market by the leverage of web crawler to obtain relative data and Prophet (a Facebook library) to conduct time series forecasting.

GRADES

Programming (C++): 96/100	Circuit Theory: 91/100	TOEFL：100
Linear Algebra: 90/100	Algorithms: 90/100	

RESEARCH INTEREST

Reinforcement learning, especially multi-agent reinforcement learning. Combination of reinforcement learning and control theory. Theoretical problem of machine learning.

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* "AXNet: ApproXimate computing using an end-to-end trainable neural network", DAC refers to The Design Automation Conference, and ICCAD refers to International Conference On Computer Aided Design.

彭正皓

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教育

上海交通大学致远学院（2015年入学）
连续两年获得致远荣誉奖学金

美国加州大学伯克利分校（2017年暑假）

技能

TENSORFLOW，KERAS等主流深度学习框架及其他库

MATLAB, C++, PYTHON等主流编程语言

LATEX、论文写作、项目管理等科研必备能力

其他能力如理解、沟通、计划、创新、时间管理能力等

科研经历

基于端到端神经网络的近似计算*

被收录为2018年DAC会议海报。我设计了一种新型的端到端神经网络结构，将传统方法中用于近似计算的两个神经网络（近似器与分类器）合二为一，在同样的效果下缩小了模型参数规模。这篇论文经修改后已经投稿ICCAD 2018。

利用强化学习进行三维集成电路布线（进行中）

本工作通过将三维集成电路布线问题转化为一个序列决策问题，利用多代理人强化学习（MULTI-AGENT REINFORCEMENT LEARNING）技术，进行三维最优化布线。本工作正在进行之中。

基于神经网络的手写四则运算算式识别

我使用TENSORFLOW训练神经网络，使用CV2进行图像处理，运用MNIST库实践了简单的迁移学习。能够使用微信发送手写的数学算式图像，自动识别算式中的数字和符号并返回计算结果。

项目经历

三体船循迹算法开发

我设计了一个让三体船自动按照给定航线行驶的算法。利用三体船平台，学习了控制理论和循迹算法。掌握较大型程序开发技能，学习工程经验。

未来国际油轮运输市场趋势

我预测了未来数年国际油轮运输市场的趋势。本项目基于爬虫得到的大量航运市场数据，利用PROPHET（FACEBOOK提供的库）进行时间序列预测。

成绩

编程（C++）：96/100　　电路理论：91/100　　托福：100

线性代数：90/100　　算法设计与分析：90/100

研究兴趣

强化学习算法，尤其是MULTI-AGENT强化学习算法。强化学习与控制理论结合。机器学习的理论性研究。

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