HU Xixu

City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong SAR
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EDUCATION

City University of Hong Kong **Kowloon, Hong Kong SAR**
Ph.D in Data Science *Sept 2020-June 2024 (to be expected)*
CGPA: 4.04/4.30
Related courses: Machine Learning Theory, Advanced Statistics, Optimization, Deep Learning

University of Science and Technology of China **Hefei, China**
B.Sc in Statistics *Sept 2016-June 2020*
CGPA: 3.37/4.30, CGPA of last 2 years : 3.92
Related courses: Mathematical Analysis, Linear Algebra, Real Analysis, Statistics

RESEARCH EXPERIENCE

Domain adaptation under general distance framework **Sept 2021 - Jan 2022**
Advisor: Prof. MA Shumin, BNU & HKBU United International College

- Revisit the classic theoretical framework in the domain adaptation field and discover new relations with different SOTA algorithms: MDD, DDC, MCD, AFN, JAN, DAN, DANN
- Extend the previous framework that can only deal with classification problem to regression scenario
- Deeply investigate the performance of using different $f-$divergence in the image domain adaptation problem, conduct extensive experiments on the Office-31, Office-home and the Digits dataset and analyze the results
- Provide the topology, computation cost and convergence rate comparison of DA algorithms commonly used divergence: MMD, $f-$divergence and Wasserstein distance
- Manuscript has been published in TMLR.

Domain adaptation using dependence regularization **May 2021 - July 2021**
Advisor: Prof. WU Qi, City University of Hong Kong

- Among the first to apply the domain adaptation (DA) idea in the financial scenarios: non-performing consumer credit classification and intra-day HKEX stock price regression
- Adopt the classical financial concept copulas to decompose source and target distribution differences into marginal distribution differences and dependence structure difference, providing flexibility in modeling the distribution shifts
- Deploy the proposed algorithm in PyTorch and acquire the SOTA performances in the previous two scenarios and UCI wine dataset, compared with other advanced DA algorithms: DAN, DANN, CORAL,MCD, AFN
- Manuscript has been submitted to TNNLS

Machine Learning for Alzheimer Disease Diagnosis **Jan 2020 - June 2020**
Advisor: Prof. LI Jing, Arizona State University

- Develop an EM algorithm to tackle the missing modalities problem in multi-modal classification of Alzheimer Disease
- Test classical CNN structure: AlexNet, VGGNet, GoogLeNet, ResNet, DenseNet on the Alzheimer Disease Classification Problem using MRI images

KEY SKILLS

Programming Language: Python, PyTorch, TensorFlow, C, R, MATLAB, SQL, LaTeX
English: TOEFL 100 (R30 L29 S20 W21), GRE 317+3.0 (V150 Q167)

胡曦煦

香港城市大学, 达之路, 九龙, 香港特别行政区
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教育经历

香港城市大学 **九龙, 香港特别行政区**
Ph.D | 数据科学 2020.9-2024.6
CGPA: 4.04/4.30
相关课程: 机器学习理论, 高等统计学, 优化理论, 深度学习

中国科学技术大学 **合肥, 安徽**
B.Sc | 统计学 2016.9-2020.6
GPA: 3.37/4.30
相关课程: 数学分析, 线性代数, 实分析, 复分析, 泛函分析, 概率论, 微分方程, 数理统计, 高等概率论

研究经历

一般距离度量下的领域自适应 2021.9 - 2022.1
指导老师: 马淑敏, 北京师范大学-香港浸会大学联合国际学院
- 重新回顾领域自适应的经典理论框架，并将之与最新的领域自适应算法构建联系: MDD, DDC, MCD, AFN, JAN, DAN, DANN
- 拓展原有的理论框架从分类问题到回归问题
- 深入探究不同 $f-$divergence 在计算机视觉领域自适应问题上的表现, 在经典数据集 Office-31, Office-home 和 Digits 数据集上进行了大量的实验和分析
- 提供了领域自适应算法常用距离度量: MMD, $f-$divergence, Wasserstein distance 不同的拓扑性质, 计算成本, 收敛速率的对比
- 文章已被 TMLR 接受并出版

基于正则化相依性结构的领域自适应算法 2021.5 - 2021.7
指导老师: 吴琦, 香港城市大学
- 创新性地将领域自适应的想法率先应用在实际金融领域: 京东白条逾期账户分类, 港交所日内股票价格回归
- 采用经典金融 copula 概念将源域与目标域的分布差异解耦为边际分布差异与相依性结构差异, 为领域自适应算法框架提供灵活性
- 将提出的算法运用 PyTorch 进行实现，在上述两个金融场景与 UCI wine quality 公开数据集上均取得领先表现, 比较的基线模型为目前最新的领域自适应算法: DAN, DANN, CORAL,MCD, AFN
- 文章初稿已提交至 TNNLS

阿兹海默症诊断的机器学习 2020.1 - 2020.6
指导老师: 李静, 亚利桑那州立大学
- 推导使用了一种期望最大算法用于解决多模态学习中模态缺失问题, 并将之应用在同时使用 MRI, FDG-PET 和 amyloid-PET 三种医学影像模态共同诊断阿兹海默症的问题当中
- 利用 MRI 图像数据构建单模态卷积神经网络区分阿兹海默症患者，测试经典卷积神经网络结构在 ADNI 数据集上的不同表现: AlexNet, VGGNet, GoogLeNet, ResNet, DenseNet

专业技能

编程语言: Python, PyTorch, TensorFlow, C, R, MATLAB, SQL, LaTeX
英语: TOEFL 100 (R30 L29 S20 W21), GRE 317+3.0 (V150 Q167)