王志源 Zhiyuan WANG

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教育经历

厦门大学信息学院　计算机科学与技术　工学学士 2017.9 - 至今

平均GPA: 3.38/4.0, 专业课GPA: 3.67/4.0

主要课程：数据结构 90 | JAVA 面向对象编程 94 | 数字信号处理 89 | UNIX 系统设计 95
数字逻辑 88 | 模式识别 87 | 计算方法 88 | 计算机图形学 92 | 计算机网络 87
编译原理 | 操作系统原理 | 数据库原理 | 计算机体系结构 (在修)

福建省智慧城市感知与计算重点实验室(SCSC)　导师：陈龙彪　研究实习 2018.9 - 至今

厦门大学经济学院　经济学　辅修 2018.11 - 至今

荣誉和奖励

2019厦门大学99周年校庆奖学金（3%）
2018, 2019 厦门大学学业优秀奖学金（20%）
中国大学生计算机设计大赛-大数据挑战赛 全国二等奖（2%）
中国大学生数学建模竞赛 福建省一等奖（5%）
厦门大学优秀团员（5%）
厦门大学三好学生（10%）
厦门大学“自强杯”足球联赛 冠军

研究经历

基于时空图神经网络的医疗资源调度研究 2019.10 - 至今
项目主理 **导师：陈龙彪**

- 在导师的指导下进行了完整的科研流程体验，并完成一篇论文的写作和中稿（GPC2020）。
- 多源数据融合协同训练框架结合改进的机器学习算法，对交通轨迹数据进行处理、挖掘。
- 利用 Tensorflow 搭建时空图神经网络 ST-GNN 预测医院的就诊需求并动态调度医疗资源。

百度-厦门大学 COVID-19 疫情传播联合研究 2020.1 - 至今
项目骨干 **指导合作：陈龙彪、熊昊一**

- 借助百度大数据研究院提供的多尺度人群移动数据，利用 Keras 和 PaddlePaddle 深度学习框架搭建了两个时空深度学习模型用来实现中国大陆城市级别的疫情风险预测。
- 发布了一个可视化系统用于展示模型预测结果，并将模型代码开源在我的GitHub上。
- 我的业务水平和科研能力在和工业界对工作规范和代码要求极高的合作过程中得到提升。

基于生物统计学和病毒传播学的人类移动对 COVID-19 传播的影响研究 2020.1 - 至今
项目骨干 **指导合作：陈龙彪、李奇渊**

- 通过统计分析方法，我们揭示了 COVID-19 疫情传播与多种因素（例如城间人口迁徙、城内活动热度、天气因素、社会经济因素）之间的相关关系，并估计了不同公共卫生干预措施，如震中封锁、全市隔离的有效性。根据我们的统计分析结果和讨论，我们在某种程度上演绎了COVID-19的传播过程，解释了人群流动与疫情爆发之间具有统计学意义的关系。

基于群智感知和图神经网络的单车调度研究 2019.3 - 2019.10
研究助理 **导师：陈龙彪**

- 手动改进了一个能够提取时间序列变化趋势的自适应数据处理的自动化算法。
- 承担了绝大部分的论文实验，包括多种基线模型和我们所提出的 BikeNet 神经网络。

论文发表

Zhiyuan Wang, Ruiying Guo, Cheng Wang, Longbiao Chen*, Demand-Responsive Windows Scheduling in Tertiary Hospital Leveraging Spatiotemporal Neural Network, The 15th International Conference on Green, Pervasive and Cloud Computing 已中稿
另有多篇论文在研/在投。

学术活动

2019 浙江大学“物联网：系统与安全”暑期学校 2019.6-2019.7
短期学习 杭州
2020 绿色、普适、云计算会议 因疫情推迟至2020.9
参会展示 西安

项目开发经历

COVID-19 相关：“疫追踪”微信小程序、疫情风险评估可视化系统 2020.1-2020.2

- 响应学院新冠应急攻关号召，参与开发公益性质的微信小程序和疫情风险评估可视化系统，团队为厦门市政府、厦门市交通局、厦门市卫健委提供分析报告与决策支持。

基于 Wi-Fi CSI 和机器学习的环境异常感知 2019.9 -2019.12

- 在浙大暑校了解了 Wi-Fi sensing 这一研究方向后，经过充分的调研学习，提议我的计算机网络课题小组对“利用 Wi-Fi CSI 信号实现环境感知”这一应用进行了复现，获最高评分。

基于词法特征和词共线率的肠癌电子病历信息抽取 2019.2 -2019.6

- 对电子病理文本进行信息抽取，各项正确率均达到95%以上，并为此开发 Web 数据系统，兼具实用性与创新性。团队获计算机设计大赛全国二等奖。

“厦园导览”——校园参观导览微信小程序 2018.7 - 2018.10

- 宿舍成立“7401工作室”开展开发工作，为厦门大学团委提供游客导览和文化宣传小程序，上线后获师生与游客的一致好评，被应用于学校游客志愿服务接待工作中。

技能与语言

编程语言：Python, Java, C, C++, SQL, Shell, HTML/CSS/JavaScript, Latex
项目工具：Tensorflow, Keras, Pandas, Neo4j, Numpy, Matplotlib, Seaborn
语言：大学英语六级，正在备考托福，具有阅读与撰写英文文献的能力。

个人陈述

性格较活泼，做事有条理，学习动机强，喜欢做实验，具有较强的自我激励能力。对科研工作有一定程度的了解并具备相关素养，期待探索有价值的领域并从事有意义的研究，有志攻读博士学位并从事科研工作。

ZHIYUAN WANG

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Xiamen, China

EDUCATION

School of Informatics, Xiamen University (XMU) *2017.9 - Present*
B.E. in Computer Science (GPA: 3.38/4.0, Upper GPA: 3.67/4.0)
Minor in Economics
Member of Fujian Key Laboratory of Sensing and Computing for Smart City (SCSC)
Major Honors and Awards:

- 2019 Scholarship for the 99^{th} Anniversary of Xiamen University (3%)
- 2019 Second prize of National, China Collegiate Computer Design Competition (2%)
- 2019 First prize of Provnice, China Undergraduate Mathematical Contest in Modeling (5%)
- 2017, 2018, 2019 Scholarship for Outstanding Academic Performance (20%)

College of Computer Science and Technology, Zhejiang University (ZJU) *2019.6 - 2019.7*
Short-Term Learning, Summer School about Internet of Things (IoT) Scientific Research

RESEARCHES AND INTERNSHIPS

Spacial-temporal Neural Network Based Hospital Windows Scheduling *2019.11 - Present*
Project Manager, SCSC Lab, XMU *advisor: Longbiao CHEN*

· Proposed the project idea and wrote the main body of the paper.
· Classified the urban functional areas and extracted the human flow in hospitals by using improved machine learning algorithm and co-training framework with multi-source data fusion.
· Built a spatial-temporal graph neural network to predict hospital visit demand with Tensorflow.

Baidu-XMU Joint Research on the Spread of the COVID-19 Epidemic *2020.1 - Present*
Key Researcher, Baidu Big Data Lab, SCSC Lab *supervisor: Longbiao CHEN, Haoyi XIONG*

· Built two deep learning models with Tensorflow and PaddlePaddle to realize the epidemic spreading prediction leveraging the human mobility big data provided by Baidu data federation.
· Published a visualization system to show the prediction results, and open-sourced my code on my own Github with Baidu and Xiamen University's permission.
· Worked with the industrial company requests a normative collaboration and strict code format, which improved my coding skills and adaptable capabilities.

Statistics and Epidemiology Based Research on the Impact of Human Mobility on the Spread of the COVID-19 Epidemic *2020.1 - Present*
Key Researcher, SCSC Lab, XMU *supervisor: Longbiao CHEN, Qiyuan LI*

· Project objective: By analyzing the time-lag cross-correlation between the spread of the COVID-19 epidemic and multiple factors, we estimated the probable effectiveness of different public health interventions, such as epicenter lockdown and city-wide quarantine. And we interpret the the spread of the COVID-19 epidemic bases on our findings and discussions.

A Crowdsensing and Graph Neural Network Based Bicycle Scheduling *2019.7 - 2019.10*
Research assistant, SCSC Lab, XMU *advisor: Longbiao CHEN*

· Processed the raw data from SQL database into temporal sequence with MySQL and Pandas.
· Proposed an adaptive algorithm to extract the variation trend of the number of bicycles in stations.
· Conducted evaluation experiments of the paper, including the baselines and the BikeNet we proposed.

PUBLICATION

Published
Zhiyuan WANG, Ruiying Guo, Cheng Wang, Longbiao Chen*
"Demand-Responsive Windows Scheduling in Tertiary Hospital Leveraging Spatiotemporal Neural Networks", The 15th International Conference on Green, Pervasive and Cloud Computing (GPC2020, EI)

ACADEMIC ACTIVITIES

The 15th International Conference on Green, Pervasive and Cloud Computing (GPC2020)
Paper Presentation — Postponed to 2020.9, caused by COVID-19

COMPETITIONS

China Collegiate Computer Design Competition - Big Data Challenge *2019.6*
Team Member *Beijing, CN*

- Project: Information Extraction of Electronic Medical Record of Cancer **(Second prize of National)**
- Proposed a lexical rule and word co-occurrence rate based algorithm to extract pathological information.
- Participated in the development of demonstration system by using Django web framework.

China Undergraduate Mathematical Contest in Modeling (CUMCM) *2019.8*
Team Lead *Xiamen, CN*

- Project: A Data-Driven Airport Taxi Scheduling Model **(First prize of Fujian province)**
- Analyzed the taxi driver's transport strategy through the data mining of taxi trajectory.
- Introduced a framework based on monte carlo algorithms and statistical method to formulate reasonable airport taxi management strategy.

COMAP's Mathematical Contest in Modeling (MCM) *2020.1*
Team Lead *Xiamen, CN*

- Project: Data mining on Amazon Online Product Reviews **(Award will be announced soon)**
- Realized emotion recognition of the product reviews text with a deep learning model LSTM.
- Proposed a significant framework to analyze the complex correlation between sales and multiple factor by using machine learning methods, statistical method and economic theories.

ON-CAMPUS ACTIVITIES

Key Player of School of Informatics Football Team in Xiamen University *2017.9 - Present*

SKILLS AND QUALIFICATIONS

Technologies/Environment: MacOS, Linux, Windows
Programming/Scripting Languages: Python, Java, C, C++, SQL, Shell, HTML/CSS/JavaScript
Tools: Tensorflow, Pandas, Keras, Neo4j, Numpy, Matplotlib, Seaborn