



# Uchechukwu Awada

## (阿瓦达)

### 工作、教育和研究

2023.08-今 讲师 (副教授), 软件学院, 河南科技学院, 新乡, 中国.

2019.09- 工学博士 (PhD), 信息与通信工程, 郑州大学, 郑州, 中国.

2023.06

联邦边缘计算中的多任务编排研究. 兴趣: 物联网 (IoT), 车联网 (IoV), 边缘计算, 云计算, 空中计算, 分布式系统, 无线通信, etc。详细研究包括:

- 部署专用边缘群集
- 将实际移动应用程序部署到边缘集群
- 开发复杂的数学模型
- 开发了几种优化策略和调度算法
- 使用现实世界的云技术, 如 Kubernetes
- 利用无人机 (UAV) 作为边缘集群
- 使用 Kubernetes 实现混合边缘集群和联合集群
- 涵盖物联网 (IoT) 边缘计算的实施
- 利用机器学习 (ML) 技术在联合边缘集群中实现有效的任务调度
- 利用联邦学习 (FL) 技术在联邦边缘集群中进行有效的多任务调度
- 分析和利用阿里巴巴集群跟踪来训练机器学习 (ML) 模型

2015.09- 研究助理, 系统研究小组 (SRG), 计算机科学学院, 圣安德鲁斯大学, 圣安德鲁

2019.07 斯, 英国.

开发了一个容器管理系统 (CMS), 用于在云虚拟机上编排容器化应用程序。CMS 提供高效的资源利用率和更快的应用程序执行时间。详细成就:

- 在真实的公共云环境中工作, 即 Amazon EC2, Microsoft Azure, Google Cloud, CoreOS, OpenStack 和 IBM BlueMix。
- 开发复杂的数学模型
- 开发了几种优化策略

- 2011.09– 研究助理, 网络和云计算实验室, 计算机科学与技术学院, 大连理工大学, 大连, 中国.  
2015.07 从事云计算研究, 开发云计算能耗模型, 获取详细的云计算能耗。
- 2009.09– 工学硕士, 计算机应用技术, 哈尔滨工程大学, 哈尔滨, 中国.  
2011.06
- 2006.09– 國家青年服務團, **National Youth Service Corps (NYSC)**, 信息和通信技术, 联邦教育部, 阿布贾, 尼日利亚.
- 2001.09– 理学学士, 计算机科学, 埃邦伊州立大学, 阿巴卡利基, 尼日利亚.  
2006.07

## 教学经历

- 2015.09– 计算机科学 (CS) 1002、1003 和 1005 导师, 圣安德鲁斯大学, 圣安德鲁斯, 英国.  
2019.07 我辅导本科生 CS 1002, 1003 和 1005 模块。这些是编程模块（面向对象编程, 即 Java 编程）。我还指导了一位硕士学位学生的最后一年项目。

## 学术奖项和奖学金

- 2019–2023 郑州大学校长奖学金  
2019.09 悉尼科技大学奖学金  
2015–2019 圣安德鲁斯大学奖学金  
2017.07 微软研究院 AI 暑期学校, 剑桥, 英国  
2011–2015 大连理工大学奖学金  
2009–2011 哈尔滨工程大学奖学金

## 专业组织和服务

- 2021–今 审稿人 - IEEE Transactions on Vehicular Technology  
2010–今 成员 - Association of Computing Machinery (ACM)  
2011–今 成员 - Institute of Electronic and Electrical Engineers (IEEE) – Computer Society  
2011–今 成员 - World Academy of Science, Engineering and Technology (WASET)  
2014–今 审稿人 - The Science and Information (SAI) Organization  
2014–今 审稿人 - IEEE Transactions on Cloud Computing  
2014–今 编委会 - International journal of Scientific and Engineering Research (IJSER)  
2017–今 成员 - CompuCast compucast.io

2017-今 成员 - University and College Union (UCU) United Kingdom

## 技能和工具

- 熟练 研究, 学术研究, 工业研究
- 熟练 JAVA, VisualBasic, MATLAB
- 熟练 PYTHON, HTML, LATEX, OpenOffice, Linux
- 熟练 计算机硬件和支持

## Academic Research Presentations

- 2021 口头陈述 – IEEE CLOUD 2021 International Conference in Chicago, USA
- 2020 口头陈述 – IEEE EDGE 2020 International Conference in Beijing, China
- 2017 海报展示 – Annual SICSA DemoFest Conference in Edinbrugh, UK
- 2017 口头陈述 – 2017 IEEE/ACM CCGrid Conference in Madrid, Spain
- 2017 海报展示 – Annual SICSA PhD Conference in Dundee, UK
- 2017 口头陈述 – 2017 ICC Conference in Cambridge, UK
- 2012 口头陈述 – 2012 IEEE APCloudCC Conference in Shenzhen, China

## 口语

- 英语 官方语言
- 伊博语 母语
- 约鲁巴语 流利
- 豪撒语 中间
- 中文 中间 会话流利

## 出版物列表

1. Uchechukwu Awada, Jiankang Zhang, Sheng Chen, Shuangzhi Li and Shouyi Yang, "Collaborative Learning-Based Inter-Dependent Task Dispatching and Co-location in Integrated Edge Computing System," 2024, in Journal of Digital Communications and Networks. **IF: 7.5 (Elsevier SCI)**
2. Uchechukwu Awada, Jiankang Zhang, Sheng Chen and Shuangzhi Li, "AirEdge: A Dependency-Aware Multi-Task Orchestration in Federated Aerial Computing," 2022, in IEEE Transactions on Vehicular Technology, doi: 10.1109/TVT.2021.3127011. **IF: 6.239(SCI)**

3. Uchechukwu Awada, Jiankang Zhang, Sheng Chen, Shuangzhi Li and Shouyi Yang, "EdgeDrones: Co-Scheduling of Drones for Multi-Location Aerial Computing Missions," 2023, in Journal of Network and Computer Applications. doi: <https://doi.org/10.1016/j.jnca.2023.103632>. **IF: 7.574(Elsevier SCI)**
4. Uchechukwu Awada, Jiankang Zhang, Sheng Chen, Shuangzhi Li and Shouyi Yang, "Integrated Edge-Enabled IoV: Towards a Resource-Aware Multi-Task Offloading and Dependency-Aware Scheduling," 2023, in Journal of Systems Architecture. doi: <https://doi.org/10.1016/j.sysarc.2023.102923>. **IF: 5.836 (Elsevier SCI)**
5. Uchechukwu Awada, Jiankang Zhang, Sheng Chen, Shuangzhi Li and Shouyi Yang, "Learning-Based Multi-Task Dispatching and Co-location in Integrated Edge Systems," 2023, in ZTE Communications. DOI: 10.12142/ZTECOM.202302007. **(CSA)**
6. Uchechukwu Awada, Jiankang Zhang, Sheng Chen and Shuangzhi Li, "Air-to-Air Collaborative Learning: A Multi-Task Orchestration in Federated Aerial Computing," 2021 IEEE International Conference on Cloud Computing (CLOUD), 2021, pp. 671-680, doi: 10.1109/CLOUD53861.2021.00086. **(EI)**
7. Uchechukwu Awada and Jiankang Zhang, "Edge Federation: A Dependency-Aware Multi-Task Dispatching and Co-location in Federated Edge Container-Instances," 2020 IEEE International Conference on Edge Computing (EDGE), 2020, pp. 91-98, doi: 10.1109/EDGE50951.2020.00021. **(EI)**
8. Uchechukwu Awada, Adam Barker: Improving Resource Efficiency of Container-Instance Clusters on Clouds. 2017 17th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGRID); 05/2017, DOI:10.1109/CCGRID.2017.113. **(EI)**
9. Uchechukwu Awada, Adam Barker: Resource Efficiency in Container-Instance Clusters. Second International Conference on Internet of Things, Data and Cloud Computing, Cambridge , United Kingdom; 03/2017, DOI:10.1145/3018896.3056798. **(EI)**
10. Awada Uchechukwu, Keqiu Li, Keqin Li: Scalable Analytic Models for Performance Efficiency in the Cloud. 2014 IEEE/ACM 7th International Conference on Utility and Cloud Computing (UCC), London, United Kingdom; 12/2014, DOI:10.1109/UCC.2014.164. **(EI)**

11. Awada Uchechukwu, Keqiu Li, Keqin Li: High-Performance Processing of Large-Scale Parallel Applications in Heterogeneous Cloud Computing Data Centers. 2014 IEEE International Conference on Big Data and Cloud Computing (BdCloud); 01/2014. **(EI)**
12. Changqing Ji, Yu Li, Wenming Qiu, Uchechukwu Awada, Keqiu Li: Big Data Processing in Cloud Computing Environments. 2012 International Symposium on Pervasive Systems, Algorithms and Networks; 12/2012, DOI:10.1109/I-SPAN.2012.9. **(EI)**
13. Awada Uchechukwu, keqiu Li, Yanming Shen: Improving Cloud Computing Energy Efficiency. IEEE Asia Pacific Cloud Computing Congress 2012; 11/2012, DOI:10.1109/APCloudCC.2012.6486511. **(EI)**
14. Uchechukwu Awada, Keqiu Li, Yanming Shen: Energy Consumption in Cloud Computing Data Centers. 06/2014; 3(3-3)., DOI:10.11591/closer.v3i3.6346
15. Awada Uchechukwu and Keqiu Li and Yanming Shen: Improving Cloud Computing Data Centers Energy Efficiency.
16. CHANGQING JI, YU LI, WENMING QIU, YINGWEI JIN, YUJIE XU, UCHECHUKWU AWADA, KEQIU LI, WENYU QU: Big data processing: Big challenges. Journal of Interconnection Networks 01/2013; 13(3-03n04)., DOI:10.1142/S0219265912500090. **(ESCI)**
17. Uchechukwu Awada: Performance Efficiency in Heterogeneous Cloud. 08/2018; DOI: 10.13140/RG.2.2.10897.89446
18. Uchechukwu Awada: CMS: Container Orchestration Across Multi-region Clouds. 06/2018; DOI: 10.13140/RG.2.2.23490.48321
19. Uchechukwu Awada: CMS: CMS: Coupled Container Orchestration in the Cloud. 07/2018; DOI: 10.13140/RG.2.2.23333.19688
20. Uchechukwu Awada: CMS: CMS: Optimal Container Management Service in Cloud Clusters. 07/2018; DOI: 10.13140/RG.2.2.30044.08322
21. Awada Uchechukwu: Hybrid Cloud Federation: A Case of Better Cloud Resource Efficiency. IEEE International Conference on Cloud Computing 2018. **(EI)**
22. Awada Uchechukwu: Application-Container Orchestration Tools and Platform-as-a-Service Clouds: A Survey. 2018.

23. Awada Uchechukwu: Optimising Application-Container Orchestration on Container-Instance Clusters. 2018 International Conference on Cloud-Based Communication Technologies and Applications.
24. Uchechukwu Awada: Optimising Application-Container Orchestration on Container-Instance Clusters. 10/2017; DOI: 10.13140/RG.2.2.28323.76320
25. Awada Uchechukwu: Application Container Orchestration on Clouds. 06/2017 The Scottish Informatics & Computer Science Alliance, PhD Conference, Dundee, UK. DOI: 10.13140/RG.2.2.19993.72808