Grace U. Nneji

Associate Professor

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Summary

Dr. Grace Ugochi Nneji is an Associate Professor at the School of International Education, Chengdu University of Technology Oxford Brookes College, a Sino-British Collaborative Institution. Her research bridges artificial intelligence with real-world applications, specializing in machine learning, deep learning, medical image analysis and large language model. She has a strong interest in explainable AI, with a focus on enhancing low-quality medical images to improve diagnostic accuracy and assist clinical decision-making. With 73+ peer-reviewed publications and 667+ citations, Dr. Nnejis contributions span healthcare informatics, agricultural intelligence, and sustainable systems. Her recent work explores large language models (LLMs) for personalized and industrial AI tasks, particularly in building adaptive and intelligent solutions. She co-leads the Computing Research Team and teaches Machine Learning, Computer Networking, Foundation of Computer Systems and Information Systems modules, empowering the next generation of AI researchers. Her projects include AI-driven systems for early disease detection and mHealth applications, addressing fairness, privacy, and accessibility in medical diagnostics. Her research has been recognized through Best Paper Awards (PRAI 2021, ICAIT 2024) and Best Oral Presentation (ICAIT 2024). She is committed to advancing interdisciplinary AI solutions that promote global health, equity, and sustainability. (*Personal Web-page*) (*Google Scholar*)

Education

2022: **Ph.D., Software Engineering**, *University of Electronic Science & Technology of China*, China.
Medical image processing, Deep learning, Machine learning, Computer vision, Data analysis, AI-based disease diagnosis.

Dissertation: Identification Based on Low Quality Medical Images Using Deep Learning.

CGPA : **4.0/4.0 (Top 1% of the Program)**

2019: **M.Eng., Software Engineering**, *University of Electronic Science & Technology of China*, China.
Data acquisition and analysis, data processing, vehicle image recognition, Image segmentation.

Thesis: Vehicle Image Recognition Using Deep Learning.

CGPA : **3.94/4.0 (Top 1% of the Program)**

2014: **B.Tech., Computer Science**, *Federal university of Technology, Owerri*, Nigeria.
Web-based Application for E-Tourism System, E-clearance management system for Graduating Students in a University Environment, Attendance Management System using Biometrics System, Android-Based Information System for Marriage Counseling.

Thesis: Web-based Application For E-Tourism System in Nigeria.

CGPA : **3.95/5.0 (Top 5% of the Program)**

Appointments

Chengdu University of Technology Oxford Brookes College

Associate Professor

Software Engineering Department, School of International Education, *April 2025–Till date*.

- Lead teaching, curriculum design, and research in AI, deep learning, machine vision, machine learning, neural networks, and image processing.
- Co-lead Instructor for the first CSC-sponsored International Summer School on AI-driven Sustainable Urban Development, earning the title of Outstanding Instructor the first foreign lecturer to receive this honor at CDUT.
- Supervise undergraduate and graduate research projects, with student-led work published in top-tier journals such as *Computers and Electronics in Agriculture* (IF: 8.9) a first for the College.
- Serve on multiple academic committees, including Programme Committee (Module Leader), Exam Board (Internal Examiner), and Computing Research Team (Co-Chair).
- Represent the department in national and international collaborations, delivering invited lectures and contributing to technical committees for major AI and computing conferences.

Senior Research Fellow

Software Engineering Department, School of International Education, *August 2022–March 2025*.

- Delivered core modules including Machine learning, Machine Vision, Basic Communication and PC Networking, Foundations of Computing Systems with Practical Teaching of C Programming and Information Systems to diverse international cohorts.
- Founded and co-chaired the Computing Research Team, fostering collaborative research and student innovation in AI, medical imaging, and energy informatics.
- Mentored over 40 students on graduate and undergraduate thesis, guiding them in advanced deep learning, AI-driven applications, and technical paper writing for international publication.
- Served as Technical Committee Member for ICACS 2024, PRAI, and other high-profile conferences, contributing to peer review and conference program development.
- Actively engaged in cross-border research projects, securing recognition through Best Paper and Best Oral Presentation Awards.

University of Electronic Science and Technology of China (UESTC)

Research Assistant

UESTC Digital Information System Processing Laboratory, *Sept. 2019 – June 2022*.

- Developed a novel super-resolution generative learning model for enhancing medical image quality for the identification of COVID-19.
- Developed a multi-channel fusion scheme for the identification of Pneumonia using chest x-ray Images.
- Developed an algorithm for identifying diabetic retinopathy using weighted fusion deep learning based on dual-channel fundus scans.
- Developed a joint framework of super-resolution model and deep neural network for the enhancement and identification of the low quality of breast cancer images.
- Developed a dual weighted shared capsule network for diabetic retinopathy fundus classification.
- Mentor and supervise International students in the development of machine learning frameworks, paper publication and thesis writing.
- Present academic seminars and practical workshops on neural networks framework and implementation.

Graduate Assistant

UESTC Digital Information System Processing Laboratory, *Sept. 2017 – 2019*.

- Developed a framework for vehicle image recognition achieving an accuracy of 97.12%.
- Data analysis and data visualization
- Developed a framework for image segmentation
- Developed an e-clearance management system for graduating students in university environment.
- Developed an android chat application

Advisor : **Prof. Cai Jingye**, *Professor, School of Information & Software Engineering*, University of Electronic Science and Technology of China (*Personal Web-page*)

Associate Advisor : **Dr. Jianhua Deng**, *Associate Professor, School of Information & Software Engineering*, University of Electronic Science and Technology of China

Teaching Experience

School of International Education, Chengdu University of Technology Oxford Brookes College

Module Leader — ***Machine Learning (CHC 6089)*** | ***Software Engineering Department***, *Sept. 2022 – Present*.

- Designed and delivered a comprehensive introduction to machine learning for a final-year undergraduate cohort.
- Covered supervised, unsupervised, and reinforcement learning paradigms, including key algorithms such as linear regression, decision trees, neural networks, clustering, PCA, anomaly detection, and Markov decision processes.
- Taught data preprocessing, feature selection, model evaluation, and interpretation techniques.
- Led hands-on labs using real-world datasets with popular ML frameworks.
- Prepared assignments, projects, and assessments to reinforce both theory and application.
- Administered and graded all evaluations, including projects, lab reports, resits, and re-submissions.

Module Leader — ***Basic Communication and Personal Computer Networking (CHC 4096)*** | ***Software Engineering Department***, *Sept. 2022 – Present*.

- Developed and delivered foundational networking course content to a second-year undergraduate cohort.
- Instructed on network components including routers, switches, and access points, and their roles in facilitating communication.
- Taught core networking protocols such as TCP/IP, UDP, and ICMP, and guided students through IPv4 and IPv6 addressing and subnetting.
- Led Cisco Packet Tracer lab sessions to configure, troubleshoot, and secure networks using firewall settings and access control lists.
- Prepared quizzes, seminar tasks, and practical exercises to reinforce theoretical concepts.
- Administered and graded all assessments, including lab reports, quizzes, resits, and re-submissions.

Module Leader — ***Information Systems (CHC 4007)*** | ***Software Engineering Department***, *Feb. 2022 – Present*.

- Designed and taught introductory information systems curriculum to 210 Sophomore students per semester.
- Covered core components of information systems including hardware, software, data, people, and processes.
- Delivered practical sessions on system modeling using StarUML, covering Data Flow Context Diagrams, Use Case Diagrams, Sequence Diagrams, and ERDs.
- Guided students in documenting system requirements, processes, and data interactions to strengthen analytical skills.
- Developed quizzes, seminar tasks, and technical designs to support learning objectives.
- Evaluated and graded all assessments, including practical reports, projects, resits, and re-submissions.

Co-Instructor — ***Machine Vision (CHC 6781)*** | ***Computer Science Department***, *Sept. 2022 – Present*.

- Design and deliver machine vision course content to final-year undergraduate students with a class size of 116.
- Conduct weekly practicals to demonstrate state-of-the-art computer vision tasks and implementation using Matlab, Keras, and TensorFlow.
- Prepare mark sheets and rubrics for machine vision coursework.
- Administered and second marked all assessments including exams, resits, and re-submissions.

Co-Instructor — ***Foundations of Computing Systems with Practical Teaching of C Programming (CHC 4013)*** | ***Software Engineering Department***, *Feb. 2024*.

- Developed and delivered course content on computer architecture fundamentals and C programming to 100+ sophomore cohort.
- Covered CPU design, memory management, and I/O operations, linking hardware concepts to programming practice.
- Guided students through practical C programming, including memory management, pointer manipulation, and bitwise operations.
- Provided step-by-step installation and configuration instructions for Code::Blocks.
- Conducted hands-on sessions where students implemented algorithms, compiled code, and debugged programs for hardware efficiency.
- second-mark quizzes, courseworks, and graded all assessments including resits and re-submissions.

Supervisor ***Graduate and Undergraduate Project Mentorship*** | ***OBU Computing***, *Sept. 2022 – Present*.

- Supervised and mentored 14 student projects per session.
- Held weekly progress meetings and coordinated milestone presentations.
- Provided strategic guidance to resolve technical and research challenges.
- Reviewed and provided feedback on opening, mid-term, and final project reports.
- Trained students in implementing robust and effective machine learning and deep learning frameworks for diverse real-life applications.

Research Interests

Medical Image Analysis and Diagnostics

Explainable and Trustworthy Artificial Intelligence

AI Applications in Agricultural, Financial, Energy, and Healthcare Sectors

Smart Agentic Systems and Context-Aware Computing

Large Language Models (LLMs) and Retrieval-Augmented Generation (RAG)

Research Grants & Funding

2021 **National Natural Science Foundation of China**, Key Personnel. Contributed to lab-funded research in AI for medical diagnostics under the supervision of the PI Prof. Jianping Li.

2021 **National High Technology Research and Development Program of China (863 Program)**, Grant No. 2021YFG0322, Contributing Researcher. Focused on deep learning models for biomedical image analysis.

2021 **Science and Technology Department of Chongqing Municipality**, Key Personnel. Participated in research on machine learning for regional healthcare solutions.

2021 **Science and Technology Research Program of Chongqing Municipal Education Commission**, Grant No. KJZD-K202114401, Contributing Researcher. Helped develop AI-based system for medical imaging interpretation.

2025 **CDUT AI Exploratory Research Fund**, Submitted as Principal Investigator under the Chengdu University of Technology Artificial Intelligence Center. Proposal Title: **"CancerInsightXAI: Attention-Driven Explainable AI System for Histopathological Screening"**.

2025 **NSFC Young Scientist Fund Proposal**, Submitted as Principal Investigator under the Ministry of Information Science. Proposal Title: **"Next-Generation Explainable AI for Multimodal Healthcare Data: Transforming Disease Diagnosis through Interpretable Convolution Neural Networks and Attention Mechanisms"**.

Publications

Selected Journal Articles

2025 **Grace Ugochi Nneji**, Happy Nkanta Monday, Venkat Subramanyam Reddy Pathapati, Saifun Nahar, Goodness Temofe Mgbejime, Edwin Sunday Umana, and Md Altab Hossin. Ffs-iml: fusion-based statistical feature selection for machine learning-driven interpretability of chronic kidney disease. *International Journal of Machine Learning and Cybernetics*, pages 1–34. Springer, 2025, **(Impact Factor:3.1)**.

2025 Happy Nkanta Monday, **Grace, Ugochi Nneji**[*+], Md Altab Hossin, Kelvin Davies Mark, Edwin Sunday Umana, Goodness Temofe Mgbejime, and Jianping Li. Enhancing ecg classification in cardiac diagnostics: A novel approach using adaptive focal cross-entropy loss function. *IEEE Journal of Biomedical and Health Informatics*, pages 1–17, 2025, **(Impact Factor:6.7)**.

2025 Xudong Li, Yutong Wang, Happy Nkanta Monday, and **Grace, Ugochi Nneji***. A novel residual learning of multi-scale feature extraction model for the classification of rice grain varieties. *Computers and Electronics in Agriculture*, volume 237, pages 1–22, 2025, **(Impact Factor:8.9)**.

2024 Chiagoziem C Ukwuoma, Dongsheng Cai, Olusola Bamisile, Hongbo Yin, **Grace Ugochi Nneji**, Happy N Monday, Ariyo Oluwasanmi, and Qi Huang. An attention fused sequence-to-sequence convolutional neural network for accurate solar irradiance forecasting and prediction using sky images. *Renewable Energy*, volume 237, page 121692. Elsevier, 2024, **(Impact Factor:9.0)**.

2024 Chukwuebuka Joseph Ejiyi, Zhen Qin, Chiagoziem Chima Ukwuoma, **Grace Ugochi Nneji**, Happy Nkanta Monday, Makuachukwu Bennedith Ejiyi, Thomas Ugochukwu Ejiyi, Uchenna Okechukwu, and Olusola O Bamisile. Comparative performance analysis of boruta, shap, and borutashap for disease diagnosis: a study with multiple machine learning algorithms. *Network: Computation in Neural Systems*, pages 1–38. Taylor & Francis, 2024, **(Impact Factor:1.1)**.

2024 Chukwuebuka Joseph Ejiyi, Zhen Qin, Chiagoziem Chima Ukwuoma, **Grace Ugochi Nneji**, Happy Nkanta Monday, Makuachukwu Bennedith Ejiyi, Ijeoma Amuche Chikwendu, and Ariyo Oluwasanmi. Improved deep neural network (enhancenet) for real-time detection of some publicly prohibited items. *Network: Computation in Neural Systems*, pages 1–28. Taylor & Francis, 2024, **(Impact Factor:1.1)**.

2024 Chukwuebuka Joseph Ejiyi, Zhen Qin, **Grace Ugochi Nneji**, Happy Nkanta Monday, Victor K Agbesi, Makuachukwu Bennedith Ejiyi, Thomas Ugochukwu Ejiyi, and Olusola O Bamisile. Enhanced cardiovascular disease prediction modelling using machine learning techniques: a focus on cardiovitalnet. *Network: Computation in Neural Systems*, pages 1–33. Taylor & Francis, 2024, **(Impact Factor:1.1)**.

2023 **Grace Ugochi Nneji**, Happy Nkanta Monday, Goodness Temofe Mgbejime, Venkat Subramanyam R Pathapati, Saifun Nahar, and Chiagoziem Chima Ukwuoma. Lightweight separable convolution network for breast cancer histopathological identification. *Diagnostics*, volume 13, page 299. MDPI, 2023, **(Impact Factor:3.0)**.

2023 Chukwuebuka Ejiyi, Zhen Qin, Makuachukwu Bennedith Ejiyi, **Grace Ugochi Nneji**, Happy Nkanta Monday, Favour Amarachi Agu, Thomas Ugochukwu Ejiyi, Chidinma Diokpo, and Chiduzie Obed Orakwue. The internet of medical things in healthcare management: a review. *Journal of Digital Health*, pages 30–62, 2023, **(Impact Factor:2.9)**.

2022 Chiagoziem Chima Ukwuoma, Zhiguang Qin, Sophyani B. Yussif, Monday N. Happy, **Grace Ugochi Nneji**, Gilbert C. Urama, Chibueze D. Ukwuoma, Nimo B. Darkwa, and Harriet Agobah. Animal species detection and classification framework based on modified multi-scale attention mechanism and feature pyramid network. ***Scientific African***, volume 16, page e01151. Elsevier, 2022, **(Impact Factor:2.7)**.

2022 Chiagoziem C Ukwuoma, Zhiguang Qin, Md Belal Bin Heyat, Faijan Akhtar, Abla Smahi, Jehoiada K Jackson, Syed Furqan Qadri, Abdullah Y Muaad, Happy N Monday, and **Grace Ugochi Nneji**. Automated lung-related pneumonia and covid-19 detection based on novel feature extraction framework and vision transformer approaches using chest x-ray images. *Bioengineering*, volume 9, page 709. MDPI, 2022, **(Impact Factor:3.8)**.

2022 Chiagoziem C Ukwuoma, Md Altab Hossain, Jehoiada K Jackson, **Grace Ugochi Nneji**, Happy N Monday, and Zhiguang Qin. Multi-classification of breast cancer lesions in histopathological images using deep_pachi: Multiple self-attention head. *Diagnostics*, volume 12, page 1152. MDPI, 2022, **(Impact Factor:3.0)**.

2022 **Grace Ugochi Nneji**, Jianhua Deng, Happy Nkanta Monday, Md Altab Hossin, Sandra Obiora, Saifun Nahar, and Jingye Cai. Covid-19 identification from low-quality computed tomography using a modified enhanced super-resolution generative adversarial network plus and siamese capsule network. ***Healthcare***, volume 10, pages pp403–423. MDPI, 2022, **(Impact Factor:2.4)**.

2022 **Grace Ugochi Nneji**, Jingye Cai, Happy Nkanta Monday, Md Altab Hossin, Saifun Nahar, Goodness Temofe Mgbejime, and Jianhua Deng. Fine-tuned siamese network with modified enhanced super-resolution gan plus based on low-quality chest x-ray images for covid-19 identification. ***Diagnostics***, volume 12, pages 717–743. MDPI, 2022, **(Impact Factor:3.0)**.

2022 **Grace Ugochi Nneji**, Jingye Cai, Jianhua Deng, Happy Nkanta Monday, Edidiong Christopher James, and Chiagoziem Chima Ukwuoma. Multi-channel based image processing scheme for pneumonia identification. ***Diagnostics***, volume 12, pages 325–351. MDPI, 2022, **(Impact Factor:3.00)**.

2022 **Grace Ugochi Nneji**, Jingye Cai, Jianhua Deng, Happy Nkanta Monday, Md Altab Hossin, and Saifun Nahar. Identification of diabetic retinopathy using weighted fusion deep learning based on dual-channel fundus scans. ***Diagnostics***, volume 12, pages 540–559. MDPI, 2022, **(Impact Factor:3.0)**.

2022 Happy Nkanta Monday, Jianping Li, **Grace Ugochi Nneji**, Saifun Nahar, Md Altab Hossin, Jehoiada Jackson, and Ariyo Oluwasanmi. A wavelet convolutional capsule network with modified super resolution generative adversarial network for fault diagnosis and classification. *Complex & Intelligent Systems*, volume 8, pages 4831–4847. Springer, 2022, **(Impact Factor:4.927)**.

2022 Happy Nkanta Monday, Jianping Li, **Grace Ugochi Nneji**, Saifun Nahar, Md Altab Hossin, Jehoiada Jackson, and Chukwuebuka Joseph Ejiyi. Covid-19 diagnosis from chest x-ray images using a robust multi-resolution analysis siamese neural network with super-resolution convolutional neural network. ***Diagnostics***, volume 12, pages 741–766. MDPI, 2022, **(Impact Factor:3.0)**.

2022 Happy Nkanta Monday, Jianping Li, **Grace Ugochi Nneji**, Saifun Nahar, Md Altab Hossin, and Jehoiada Jackson. Covid-19 pneumonia classification based on neurowavelet capsule network. ***Healthcare***, volume 10, pages 422–441. MDPI, 2022, **(Impact Factor:2.4)**.

2022 Happy Nkanta Monday, Jianping Li, **Grace Ugochi Nneji**, Md Altab Hossin, Saifun Nahar, Jehoiada Jackson, and Ijeoma Amuche Chikwendu. Wmr-depthwisenet: A wavelet multi-resolution depthwise separable convolutional neural network for covid-19 diagnosis. ***Diagnostics***, volume 12, pages 765–788. MDPI, 2022, **(Impact Factor:3.0)**.

2022 Goodness Temofe Mgbejime, Md Altab Hossin, **Grace Ugochi Nneji***, Happy Nkanta Monday, and Favour Ekong. Parallelistic convolution neural network approach for brain tumor diagnosis. *Diagnostics*, volume 12, page 2484. MDPI, 2022, **(Impact Factor:3.0)**.

2022 Chukwuebuka Joseph Ejiyi, Zhen Qin, Abdulhaq Adetunji Salako, Monday Nkanta Happy, **Grace Ugochi Nneji**, Chiagoziem Chima Ukwuoma, Ijeoma Amuche Chikwendu, and Ji Gen. Comparative analysis of building insurance prediction using some machine learning algorithms. ***International Journal of Interactive Multimedia & Artificial Intelligence***, volume 7. Universidad International de La Rioja (UNIR), 2022, **(Impact Factor:3.137)**.

2022 Bless Lord Y Agbley, Jianping Li, Md Altab Hossin, **Grace Ugochi Nneji**, Jehoiada Jackson, Happy Nkanta Monday, and Edidiong Christopher James. Federated learning-based detection of invasive carcinoma of no special type with histopathological images. *Diagnostics*, volume 12, page 1669. MDPI, 2022, **(Impact Factor:3.0)**.

2022 Daniel Addo, Shijie Zhou, Jehoiada Kofi Jackson, **Grace Ugochi Nneji**, Happy Nkanta Monday, Kwabena Sarpong, Rutherford Agbeshi Patamia, Favour Ekong, and Christyn Akosua Owusu-Agyei. Evae-net: An ensemble variational autoencoder deep learning network for covid-19 classification based on chest x-ray images. *Diagnostics*, volume 12, page 2569. MDPI, 2022, **(Impact Factor:3.0)**.

Under Review Journal Article

2025 **Grace Ugochi Nneji, Happy Nkanta Monday and Edwin Sunday Umana**, Predicting Customer Attrition in Financial Banking using Hybrid Metaheuristic-based and Optimization Machine Learning Techniques, In *Expert System and Applications*, **(Impact Factor: 7.5)**.

2025 **Grace Ugochi Nneji, Happy Nkanta Monday, Richard Iherorochi Nneji, Gladys Chinyere Olumba, Peace Nkanta Umoh, Edwin Sunday Umana**, FusionSelectSHAP for Post-Myocardial Infarction Angina Prediction and Explainability, In *Computer in Biology and Medicine*, **(Impact Factor: 7.0)**.

2025 **Grace Ugochi Nneji, Happy Nkanta Monday, Richard Iherorochi Nneji, Gladys Chinyere Olumba, Peace Nkanta Umoh, Edwin Sunday Umana**, Explainable AI for Chronic Kidney Disease: A Novel Principal Factor Discriminant Analysis Approach for Feature Selection and Prediction, In *Network Modeling Analysis in Health Informatics and Bioinformatics, Elsevier*,**(Impact Factor: 2.0)**.

2025 **Grace Ugochi Nneji, Happy Nkanta Monday, Richard Iherorochi Nneji, Gladys Chinyere Olumba, Peace Nkanta Umoh, Edwin Sunday Umana**, Explainable Financial Churn Prediction using SHAP-Driven FusionBoost-MetaTuneML, In *Annal of Operation Research, Springer*,**(Impact Factor: 4.4)**.

Selected Conference Proceedings

2024 Chang Yu, Xiyue Lin, Goodness T Mgbejime, Yaoqing Wang, and **Grace, Ugochi Nneji***. Super-resolution with rcan for improved malaria cell classification: A performance evaluation. In *2024 8th International Symposium on Computer Science and Intelligent Control (ISCSIC)*, pages 137–141. IEEE, 2024.

2024 Keliang Wu, Jincheng Peng, Xiang Feng, Zixuan Chen, and **Grace Ugochi Nneji***. Attention-enhanced ensemble learning for diabetic retinopathy classification with interpretability. In *2024 IEEE 16th International Conference on Advanced Infocomm Technology (ICAIT)*, pages 228–233. IEEE, 2024.

2024 Yong Wang, Jiexuan Shen, Shi Li, Xinglin Li, and **Grace Ugochi Nneji***. Evaluating the effectiveness of feature selection and explainable ai in predicting acute myocardial infarction using machine learning models. In *2024 5th International Conference on Machine Learning and Computer Application (ICMLCA)*, pages 6–10. IEEE, 2024.

2024 Yaoqing Wang, Chang Yu, Xiyue Lin, Goodness Temofe Mgbejime, **Grace Ugochi Nneji***, and Happy N. Monday. Leveraging ensemble deep learning model for fruit image recognition with explainable ai. In *2024 5th International Conference on Big Data & Artificial Intelligence & Software Engineering (ICBASE)*, pages 195–199, 2024.

2024 Jiexuan Shen, Shi Li, Li Xinglin, Yong Wang, and **Grace Ugochi Nneji***. Explainable ai for the prediction and estimation of obesity levels using machine learning models. In *2024 4th International Conference on Electronic Information Engineering and Computer Science (EIECS)*, pages 709–713. IEEE, 2024.

2024 Goodness Temofe Mgbejime, Yaoqing Wang, Chang Yu, Xiyue Lin, and **Grace Ugochi Nneji***. Rice grain classification using attention-based ensemble learning model with explainable ai. In *2024 4th International Conference on Electronic Information Engineering and Computer Science (EIECS)*, pages 937–940. IEEE, 2024.

2024 Xiyue Lin, Goodness Temofe Mgbejime, Yaoqing Wang, Chang Yu, **Grace Ugochi Nneji***, and Happy Nkanta Monday. Mask detection with an improved faster r-cnn. In *2024 17th International Conference on Advanced Computer Theory and Engineering (ICACTE)*, pages 216–220, 2024.

2024 Xinglin Li, Yong Wang, Jiexuan Shen, Shi Li, and **Grace Ugochi Nneji***. Ensemble learning approach for car and tank image identification with explainable ai. In *2024 5th International Conference on Big Data & Artificial Intelligence & Software Engineering (ICBASE)*, pages 200–203. IEEE, 2024.

2024 Shi Li, Xinglin Li, Yong Wang, Jiexuan Shen, and **Grace Ugochi Nneji***. Dependable ai machine learning models for the prediction of urinary system diseases. In *2024 17th International Conference on Advanced Computer Theory and Engineering (ICACTE)*, pages 366–370. IEEE, 2024.

2024 Xiang Feng, Zixuan Chen, Keliang Wu, Jincheng Peng, and **Grace Ugochi Nneji***. Dual convolutional neural network with explainability attention mechanism for diabetic retinopathy classification. In *2024 7th International Conference on Pattern Recognition and Artificial Intelligence (PRAI)*, pages 596–601. IEEE, 2024.

2024 Zixuan Chen, Keliang Wu, Xiang Feng, **Grace Ugochi Nneji***, Happy Nkanta Monday, and Jincheng Peng. Enhancing brain tumor diagnosis: A cutting-edge ensemble deep learning approach. In *Proceedings of the 2024 8th International Conference on Algorithms, Computing and Systems*, pages 43–49, 2024.

2021 **Grace Ugochi Nneji**, Jingye Cai, Deng Jianhua, Chukwuebuka Joseph Ejiyi, Edidiong Christopher James, Goodness Temofe Mgbejime, and Ariyo Oluwasanmi. A super-resolution generative adversarial network with siamese cnn based on low quality for breast cancer identification. In *2021 4th International Conference on Pattern Recognition and Artificial Intelligence (PRAI)*, pages 218–223. IEEE, 2021.

2021 **Grace Ugochi Nneji**, Jingye Cai, Deng Jianhua, Ijeoma Amuche Chikwendu, Ariyo Oluwasanmi, Edidiong Christopher James, and Goodness Temofe Mgbejime. Enhancing low quality in radiograph datasets using wavelet transform convolutional neural network and generative adversarial network for covid-19 identification. In *2021 4th International Conference on Pattern Recognition and Artificial Intelligence (PRAI)*, pages 146–151. IEEE, 2021.

2021 **Grace Ugochi Nneji**, Jingye Cai, Jianhua Deng, Saifun Nahar, Goodness Temofe Mgbejime, Edidiong Christopher James, and Surafel Kifetew Woldeyes. A dual weighted shared capsule network for diabetic retinopathy fundus classification. In *2021 International Conference on High Performance Big Data and Intelligent Systems (HPBD&IS)*, pages 297–302. IEEE, 2021.

2021 **Grace Ugochi Nneji**, Jingye Cai, Jianhua Deng, Happy N Monday, Edidiong C James, Bona D Lemessa, Abel Z Yutra, Yobsan B Leta, and Saifun Nahar. Covid-19 identification using deep capsule network: A perspective of super-resolution cnn on low-quality cxr images. In *2021 the 7th International Conference on Communication and Information Processing (ICCIP)*, pages 96–102. ACM, 2021.

2021 Happy Nkanta Monday, Jian Ping Li, **Grace Ugochi Nneji**, Abel Zenebe Yutra, Bona Debela Lemessa, Saifun Nahar, Edidiong Christopher James, and Amin Ul Haq. The capability of wavelet convolutional neural network for detecting cyber attack of distributed denial of service in smart grid. In *2021 18th International Computer Conference on Wavelet Active Media Technology and Information Processing (ICCWAMTIP)*, pages 413–418. IEEE, 2021.

2021 Happy Nkanta Monday, Jian Ping Li, **Grace Ugochi Nneji**, Ariyo Oluwasanmi, Goodness Temofe Mgbejime, Chukwuebuka Joseph Ejiyi, Ijeoma Amuche Chikwendu, and Edidiong Christopher James. Improved convolutional neural multi-resolution wavelet network for covid-19 pneumonia classification. In *2021 4th International Conference on Pattern Recognition and Artificial Intelligence (PRAI)*, pages 267–27. IEEE, 2021.

2021 Happy Nkanta Monday, Jian Ping Li, **Grace Ugochi Nneji**, Edidiong Christopher James, Yobsan Bayisa Leta, Saifun Nahar, and Amin Ul Haq. Shared weighted continuous wavelet capsule network for electrocardiogram biometric identification. In *2021 18th International Computer Conference on Wavelet Active Media Technology and Information Processing (ICCWAMTIP)*, pages 419–425. IEEE, 2021.

2021 Happy Nkanta Monday, Jian Ping Li, **Grace Ugochi Nneji**, Edidiong Christopher James, Ijeoma Amuche Chikwendu, Chukwuebuka Joseph Ejiyi, Ariyo Oluwasanmi, and Goodness Temofe Mgbejime. The capability of multi resolution analysis: A case study of covid-19 diagnosis. In *2021 4th International Conference on Pattern Recognition and Artificial Intelligence (PRAI)*, pages 236–242. IEEE, 2021.

2021 Ejiyi Chukwuebuka Joseph, Olusola Bamisile, **Grace Ugochi Nneji**, Qin Zhen, Ndalahwa Ilakoze, and Chikwendu Ijeoma. Systematic advancement of yolo object detector for real-time detection of objects. In *2021 18th International Computer Conference on Wavelet Active Media Technology and Information Processing (ICCWAMTIP)*, pages 279–284. IEEE, 2021.

2019 Saifun Nahar, Ting Zhong, **Grace Ugochi Nneji**, Michael O Mills, and Hassan S Abubakar. Analyzing data mining and its application to smart business. In *2019 4th Technology Innovation Management and Engineering Science International Conference (TIMES-iCON)*, pages 1–5. IEEE, 2019.

2019 Saifun Nahar, Ting Zhong, Michael O Mills, **Grace Ugochi Nneji**, and Hassan S Abubakar. A survey on data stream mining towards the internet of things application. In *2019 4th Technology Innovation Management and Engineering Science International Conference (TIMES-iCON)*, pages 1–5. IEEE, 2019.

2018 **Grace Ugochi Nneji**, Jianhua Deng, Sarder S Shakher, Basil C Mbonu, and Abel Ogungbile. A collaborative learning approach for integrated time based online environment. In *2018 IEEE 9th Annual Information Technology, Electronics and Mobile Communication Conference (IEMCON)*, pages 1138–1144. IEEE, 2018.

2018 **Grace Ugochi Nneji**, Jianhua Deng, Sarder S Shakher, Basil C Mbonu, and Mercy C Nneji. Online collaborative approach of interactive antenatal lectures for expectant mothers. In *2018 IEEE 9th Annual Information Technology, Electronics and Mobile Communication Conference (IEMCON)*, pages 1047–1053. IEEE, 2018.

2018 **Grace Ugochi Nneji**, Jianhua Deng, Sarder S Shakher, David Agomuo, and Chiagoziem C Ukwuoma. A multimedia computer aided learning software. In *2018 IEEE 9th Annual Information Technology, Electronics and Mobile Communication Conference (IEMCON)*, pages 807–813. IEEE, 2018.

2018 **Grace Ugochi Nneji**, Jianhua Deng, Sarder S Shakher, David Agomuo, and Ifeanyi D Dike. An improved e-clearance management system for graduating students in a university environment. In *2018 IEEE 9th Annual Information Technology, Electronics and Mobile Communication Conference (IEMCON)*, pages 74–80. IEEE, 2018.

2018 **Grace Ugochi Nneji**, Jianhua Deng, Basil C Mbonu, Mercy C Nneji, and Eziefuna E Onyinye. Android-based information system for marriage counseling. In *2018 IEEE 9th Annual Information Technology, Electronics and Mobile Communication Conference (IEMCON)*, pages 978–984. IEEE, 2018.

2018 **Grace Ugochi Nneji** Chiagoziem C. Ukwuoma David Agomuo Happy Nkanta Monday, Jian Ping Li and Richard I. Nneji. Ensuring data governace and enhancing data security in a private cloud environment. In *2018 IEEE 9th Annual Information Technology, Electronics and Mobile Communication Conference (IEMCON)*, pages 1018–1024. IEEE, 2018.

Selected Journal Peer-Review

Journal of Medical Internet Research

JMIR medical Informatics

JMIR Research Protocol

JMIR Bioinformatics and Biotechnology

Journal of Pharmaceutical Research International

Open Science Journal

BMC Medical Informatics and Decision Making

Scientific Reports

PeerJ

IJIMAI

Selected Certificates

2022 TensorFlow Developer Certificate - TensorFlow

2023 Machine Learning Specialization - DeepLearning.AI and Stanford University

2024 Google Data Analytics Professional Certificate - Google

2024 IBM Data Science Professional Certificate - IBM

2024 Generative AI: Elevate Your Data Science Career - IBM

2024 Developing AI Applications with Python and Flask - IBM

Academic Achievements & Recognitions

2025 **First undergraduate students with Top-Rank Paper Q1, Impact Factor =7.7 'Computers and Electronics in Agriculture'** under my supervision at the College of International Education (*CDUT News*)

2025 **Outstanding Instructor Award** Recognized as the first foreign faculty member at Chengdu University of Technology to receive this honor, for co-leading the *AI-Driven Sustainable Urban Development Program*, the universitys inaugural summer school initiative funded by the Chinese Government Scholarship (CSC). (*News*)

2024 **Best Oral Presentation Award**, 2024 IEEE 16th International Conference on Advanced Infocomm Technology (ICAIT),Enshi, China, 16-19 August 2024

2021 **Best Paper Award**, 2021 the 4^{th} International Conference on Pattern Recognition and Artificial Intelligence (PRAI), Yibin, Sichuan, China, August 20–22, 2021

2019-2020 1st Prize of Academic Achievement of the Doctoral Category.

2017-2018 2018 UESTC Overall Outstanding Achievement

2017-2018 1st Prize of Academic Achievement of the Master Category.

2017-2018 3rd Prize of Excellent Performance of the Master Category.

Scholarship

2019–2022 Recipient of the ***University Full Scholarship*** for Doctoral Research Program, awarded by the University of Electronic Science and Technology of China (UESTC).

2017–2019 Recipient of the ***University Partial Scholarship*** for Masters' Research Program, awarded by the University of Electronic Science and Technology of China (UESTC).

Skills & Tools

Programming	Python, Latex, R, C
Machine Learning	Image processing, Supervised learning, Unsupervised learning, Deep learning
Libraries & Framework	TensorFlow, Keras, OpenCV, Kivy, Matplotlib, Numpy, Scikit-learn, Pandas, Hugging Face Transformers
Tools	Jupyter, GitHub, Flask, VS Code, Code::Blocks, Cisco Packet Tracer, StarUML

Data Science & Visualization	Matplotlib, Seaborn, Power BI, Tableau
Other	LaTeX, Microsoft Office, Research Writing & Peer Review

Selected Position of Responsibility & Services

August 2025	**Technical Committee Member**, IEEE 8th International Conference on Pattern Recognition and Artificial Intelligence (PRAI 2025)
July 2025	**Co-Lead Instructor**, CDUT International Summer School Program on Artificial Intelligence
April 2025	**Research Mentor**, Student Publication in Computers and Electronics in Agriculture (Impact Factor: 8.9)
Oct. 2024	**Technical Committee Member**, 8th International Conference on Algorithms, Computing and Systems (ICACS 2024), Hong Kong
Sept. 2024	**Foreign Expert Nominee**, Ministry of Foreign Expert Bureau, Foreign Expert Workshop "Walk into the Glamorous Chengdu"
August 2024	**Awardee**, ICAIT 2024 Best Oral Presentation, "Attention-Enhanced Ensemble Learning for Diabetic Retinopathy Classification"
Jan. 2023 - Present	**Internal Examiner**, Exam Board Committee, CDUT Oxford Brookes Program
Feb. 2024	**Technical Committee Member**, International Computer Conference on Wavelet Active Media Technology and Information Processing
Sept. 2022 - Present	**Module Leader**, Programme Committee, CDUT Oxford Brookes Program
Sept. 2022 - Present	**Co-Chair**, Computing Research Team, CDUT-Oxford Brookes College
January 2021	**Distinguished Judge**, USAD CHINA 2021
Aug. 2021	**Awardee**, PRAI 2021 Best Paper Award, "The capability of multi-resolution analysis: A case study of COVID-19 diagnosis"
May 2021	**Special Organizer**, International Student Union (ISU) Experience, 2021, UESTC
May 2021	**Team Lead**, Tianjiao Community Service and Development, Chengdu, Sichuan
April 2021	**Academic Judge**, Science and Technology Course Interpretation, UESTC
March 2019	**Academic Mentor**, International Student Union, UESTC
January 2019	**Academic Guest Speaker**, School of Information and Software Engineering, UESTC

Referees

Available upon request.