



**The Wallace H. Coulter Distinguished Faculty Fellow,
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Title: Translating AI for Healthcare and Biomedicine

Abstract: The 21st century has witnessed major challenges caused by both COVID19 pandemic and aging-related epidemic. Biomedical big data, AI, and metaverse have all played roles in addressing these challenges. In this talk, I will present advances in AI for healthcare and biomedicine such as Alzheimer's Disease (AD) and COVID19. On AD epidemic, without effective treatment, early intervention is a key. Thus, how to integrally analyze huge volume of imaging, genetic, and clinical test data to classify patients into proper progression stages is critically important. I will show results using stacked denoising auto-encoders for EHR and genetic data, 3D-CNNs for imaging data, and explainable AI for AD. On COVID19, metaverse style intelligent reality (IR) has grown rapidly in healthcare because traditional medical services are disrupted due to quarantine and social distancing. As part of digital health technologies, I will show how metaverse revolutionizes healthcare with improved service accessibility and quality.

Bio-Sketch: Dr. May Dongmei Wang is Wallace H. Coulter Distinguished Faculty Fellow and full professor of Biomedical Engineering, Electrical and Computer Engineering, Computational Science and Engineering at Georgia Institute of Technology (**GT**) and Emory University (**EU**) in Atlanta, Georgia, USA. She is Director of Biomedical Big Data Initiative, Georgia Distinguished Cancer Scholar, Petit Institute Faculty Fellow, Kavli Fellow, AIMBE Fellow, IAMBE Fellow, IEEE Fellow, and Board of Directors of American Board of AI in Medicine. Her research is on Biomedical Big Data with AI-Driven Intelligent Reality (IR) for predictive, personalized, and precision health (pHealth). She published over 320 articles in referred journals and conference proceedings with over 16,000 Google Scholar citations, and delivered more than 300 invited and keynote lectures. Dr. Wang received BEng from Tsinghua University China, and MS with PhD degrees from **GT**. She is a recipient of **GT** Outstanding Faculty Mentor for Undergrad Research Award, and **EU** MilliPub Award (for a high-impact paper that is cited over 1,000 times). Dr. Wang is the Senior Editor for IEEE Journal of Biomedical & Health Informatics (Impact Factor 7.7), an Associate Editor for IEEE Transactions for BME and IEEE Reviews for BME, a panelist for NIH CDMA (Clinical Data Management and Analysis) Study Section, NSF Smart and Connect Health, and Brain Canada. She is elected Chair of ACM Special Interest Group in Bioinformatics (SIGBio), elected VP of IEEE Engineering in Medicine and Biology Society (IEEE-EMBS), a member of IEEE Future Directions Committee and International Academy of Med. and Bio. Eng. (IAMBE) Executive Committee. She was 2015-2017 **GT** Biomedical Informatics Program Co-Director in Atlanta Clinical and Translational Science Institute (ACTSI), Director of Bioinformatics and Biocomputing Core in NIH/NCI-sponsored U54 CCNE, and Co-Director of **GT** Center of Bio-Imaging Mass Spectrometry. She was 2014-2015 IEEE-EMBS Distinguished Lecturer, and an Emerging Area Editor for Proceedings of National Academy of Sciences. She is 2023 ELATES (Executive Leadership in Academic Technology, Engineering and Science) Fellow, 2022 GT President LeadingWomen, 2021 GT Provost Emerging Leaders, and 2018-2021 GT Carol Ann and David Flanagan Distinguished Faculty Fellow. Her research has been supported by NIH, NSF, CDC, VA, Georgia Research Alliance, Georgia Cancer Coalition, Shriners' Children, Children's Health Care of Atlanta, Enduring Heart Foundation, Coulter Foundation, Imlay Foundation, Microsoft Research, HP, UCB, and Amazon.