

HYUNJUNG GLORIA KWAK, PhD
Assistant Professor
Nell Hodgson Woodruff School of Nursing
Emory University
Hyunjung.kwak@emory.edu

EDUCATION

2024	Harvard Medical School, Boston, USA	Postdoctoral Fellowship
2024	Massachusetts General Hospital, Boston, USA	Postdoctoral Fellowship
2021	The Hong Kong University of Science and Technology, Hong Kong, HKG	PhD, Computer Science and Technology
2014	University College London, London, GBR	MS, Machine Learning
2013	Korea University, Seoul, KOR	BS, Computer and Communication Engineering
2012	University of Nottingham, Nottingham, GBR	Erasmus

PROFESSIONAL POSITIONS

August 2024-Present	Assistant Professor, Emory University School of Nursing, Atlanta, US
January 2024-Present	Section Editor, Algorithm Bias and Digital Health Equity, PLOS Digital Health
2021-2024	Research Fellow, Department of Neurology, Harvard Medical School, Boston, US
2021-2024	Research Fellow, Department of Neurology, Massachusetts General Hospital, Boston, US
2022	External Committee Member, Massachusetts Institute of Technology, Boston, US
2022	External Committee Member, Harvard T.H. Chan School of Public Health, Boston, US
2018-2020	Teaching Assistant, The Hong Kong University of Science and Technology, Hong Kong, HKG
2015-2017	Data Scientist, Artificial Intelligence Center, LG (CNS), Seoul, KOR
2015	Data Analyst, Data Analytics & Consulting, Deloitte, Seoul, KOR
2012	Research Intern, National Forensic Service, Seoul, KOR

SCHOLARSHIP: PUBLICATIONS

Journal Articles

Kwak, G. H., Moukheiber, D., Moukheiber, M., Moukheiber, L., Moukheiber, S., Butala, N., Celi, L. A., & Chen, C. (2025). EchoNotes Structured Database derived from MIMIC-III (ECHO-NOTE2NUM). *Scientific Data*.

Kennelly, M., Webb, A. J., Ack, S. E., **Kwak, G. H.**, Rosand, J., & Rosenthal, E. S. (2025). Practice-Pattern Variation in Neurocritical Care Blood Pressure Control Reveals Opportunities for Improved Long-Term Hypertension Control. *Neurology: Clinical Practice*, 15(2), e200453.

Kwak, G. H., Madushani, R. W., Adhikari, L., Yan, A. Y., Rosenthal, E. S., Sebbane, K., ... & Kistler, E. A. (2024). Septic Shock Requiring Three Vasopressors: Patient Demographics and Outcomes. *Critical care explorations*, 6(11), e1167.

Kwak, G. H., Kamdar, H. A., Douglas, M. J., Hu, H., Ack, S. E., Lissak, I. A., ... & Rosenthal, E. S. (2024). Social Determinants of Health and Limitation of Life-Sustaining Therapy in Neurocritical Care: A CHoRUS Pilot Project. *Neurocritical Care*, 1-14.

Kwak, G. H., Baek, S. H., & Kwak, E. J. (2024). Effects of the COVID-19 pandemic on senior dental students in Korea: Examining stress, burnout, and depression. *Journal of Dental Sciences*, 19(2), 909-918.

Kwak, G. H., Ling, L., & Hui, P. (2021). Deep reinforcement learning approaches for global public health strategies for COVID-19 pandemic. *PloS one*, 16(5), e0251550.

Kwak, G. H., Ling, L., & Hui, P. (2021). Predicting the need for vasopressors in the intensive care unit using an attention based deep learning model. *Shock*, 56(1), 73-79.

Kwak, G. H., Kwak, E. J., Song, J. M., Park, H. R., Jung, Y. H., Cho, B. H., ... & Hwang, J. J. (2020). Automatic mandibular canal detection using a deep convolutional neural network. *Scientific Reports*, 10(1), 5711.

Siu, B. M. K., **Kwak, G. H.,** Ling, L., & Hui, P. (2020). Predicting the need for intubation in the first 24 h after critical care admission using machine learning approaches. *Scientific reports*, 10(1), 20931.

Conference Papers/Posters

Shao, M., Kang, Y., Hu, X., **Kwak, H. G.,** Yang, C., & Lu, J. (2025). Mining Social Determinants of Health for Heart Failure Patient 30-Day Readmission via Large Language Model. *The 20th World Congress on Medical and Health Informatics*.

Kwak, G. H., Kamdar, H. A., Bitar, R., Yechoor, N., Rosenthal, E. S. & on behalf of the CHoRUS Research Network Investigators. (2024). Understanding the Association Between Social Determinants of Health and Early Limitation of Life-Sustaining Therapy in the Neurocritical Care Unit (Distinguished). *Neurocritical Care Society*.

Young, M., Williams, I., Cordes, A., **Kwak, H.,** Zabihi, M., Bihorac, A., Hu, X., Geer, A., Li, X., Rosenthal, E. & and Bridge2AI for Clinical Care (CHoRUS) Investigators. (2024). Toward an Ethical Framework for Development and Deployment of AI in Neurocritical Care: Progress from the Bridge2AI for Clinical Care (CHoRUS) Program. *Neurocritical Care Society*.

Mohagheghian, F., Sadan, O., Bateh, K. M., **Kwak, H.,** Geer, A., Rosenthal, E., Zabihi, M., & Hu, X. (2024). Application of Intracranial Pressure Signals to Monitor Vasospasm Severity in Patients with Aneurysmal Subarachnoid Hemorrhage. *Neurocritical Care Society*.

Kwak, G. H., Madushani, R. W., Adhikari, L., Yan, A. Y., Celi, L. A., Wong, A. & Kistler, E. A. (2023). Incidence and risk of mortality in patients on three vasopressors for management of septic shock. *Critical Care Medicine*. 51.1 (2023), p. 587.

Yang, M. Y., **Kwak, G. H.,** Pollard, T., Celi, L. A. & Ghassemi, M. (2023, August). Evaluating the impact of social determinants on health prediction in the intensive care unit. In *Proceedings of the 2023 AAAI/ACM Conference on AI, Ethics, and Society* (pp. 333-350).

Kwak, G. H., Ack, S. E., Kamdar, H. A., Reeves, C., Yechoor, N., Williamson, T. & Rosenthal, E. S. (2022). Social Neuroscience intensive care mortality, limitation of life-sustaining therapy, and detection of neurologic deterioration are associated with social determinants of health. *Neurocritical Care Society*, 1-14.

Zabihi M., Rubin, D., Ack, S. E., Ho, K., **Kwak, G. H.,** Junior, V. M., Zafar, S., Bodien, Y. & Rosenthal, E. S. (2022). Resting State Electroencephalography for Continuous, Passive Prediction of Coma Recovery After Acute Brain Injury. *Neurocritical Care Society*.

Kwak, G. H., Chen, C., Ling, L., Ghosh, E., Celi, L. A. & Hui, P. (2021). Predicting Hyperkalemia in the ICU and Evaluation of Generalizability and Interpretability. *AAAI Trustworthy Workshop*.

Kwak, G. H., & Hui, P. (2019). DeepHealth: Review and challenges of artificial intelligence in health informatics. *arXiv preprint arXiv:1909.00384*.

Databases

Kwak, G. H., Moukheiber, D., Moukheiber, M., Moukheiber, L., Moukheiber, S., Butala, N., Celi, L. A., & Chen, C. (2024). EchoNotes Structured Database derived from MIMIC-III (ECHO-NOTE2NUM). *PhysioNet*. <https://doi.org/10.13026/0myn-kk52>.

TEACHING ACTIVITIES

Courses Taught

2025 NRS 752 Foundations of Computation for Nursing Research II, Faculty
2022 HST 936 Health Disparities Research and Data Science for Disaster Resilience
2022 BST 209 Collaborative Data Science in Healthcare
2020 COMP 4611 Computer Architecture
2020 COMP 1001 Exploring Multimedia & Internet Computing
2019 COMP 1001 Exploring Multimedia & Internet Computing
2018 COMP 1001 Exploring Multimedia & Internet Computing

PROFESSIONAL AND UNIVERSITY SERVICE ACTIVITIES

Member in Professional Organizations

SDOH Advanced Research Training at Emory	Speaker
DM-SmartHealth workshop at SMARTCOMP	Committee
Workshop on AI for Maternal and Child Health	Speaker
American Heart Association	Speaker
Emory AI Health Symposium	Organizer, Moderator
Bridge2AI Consortium	Speaker
American College of Surgeons Quality and Safety Conference	Speaker
Yonsei University College of Medicine Clinical Seminar	Speaker
KAIST Clinical Seminar	Speaker
Neurocritical Care Society	Presenter
Critical Care Congress	Presenter
Duke Datathon	Committee
Emory Health AI Bias Datathon	Committee
MIT Critical Datathon	Committee
Women in Data Science	Committee
Singapore Clinical Datathon	Committee
Chinese PLA General Hospital-MIT Health Data Conference	Committee
Korea Clinical Datathon	Committee
Japan Big Data Machine Learning in Healthcare	Committee
Journal of Clinical and Translational Science	Reviewer
Journal of Clinical Monitoring and Computing	Reviewer
PLOS Digital Health	Reviewer
Nature Scientific Reports	Reviewer
Nature Scientific Data	Reviewer
IEEE Access	Reviewer
IEEE Journal of Biomedical and Health Informatics	Reviewer
Neurocritical Care Society	Member
Critical Care Congress	Member