

HYUNJUNG GLORIA KWAK, PhD  
Assistant Professor  
Nell Hodgson Woodruff School of Nursing  
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## EDUCATION

|      |                                                                       |                                                  |
|------|-----------------------------------------------------------------------|--------------------------------------------------|
| 2021 | The Hong Kong University of Science and Technology,<br>Hong Kong, HKG | PhD, Computer Science<br>and Technology          |
| 2014 | University College London, London, GBR                                | MS, Machine Learning                             |
| 2013 | Korea University, Seoul, KOR                                          | BS, Computer and<br>Communication<br>Engineering |
| 2012 | University of Nottingham, Nottingham, GBR                             | Erasmus                                          |

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## PROFESSIONAL POSITIONS

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|----------------------|----------------------------------------------------------------------------------------|
| 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                                 |

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## 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., Yecheor, 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., Yecheor, 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>.

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### **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

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### **PROFESSIONAL AND UNIVERSITY SERVICE ACTIVITIES**

#### **Member in Professional Organizations**

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|------------------------------------------------------------|----------------------|
| 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               |