

# CURRICULUM VITAE

Sena Chae, PhD, RN  
Assistant Professor  
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## EDUCATION

- 2020 PhD, Nursing, University of Iowa, Iowa City, IA  
PhD Dissertation: Clustering and Prediction of Cancer Symptom Trajectories Using Longitudinal Nursing Documentation Data  
2018 MS, Health Informatics, University of Iowa, Iowa City, IA  
2013 MSN, Nursing, Yonsei University, Seoul, South Korea  
2006 BSN, Nursing, CHA University, Pocheon, South Korea

## LICENSURE

- 2016-present RN, Iowa Board of Nursing #143173  
2009-2018 RN, New York Board of Nursing #622859  
2006-present Health Teacher's License, South Korea  
2006-present Nurse's License, South Korea #2171

## CERTIFICATIONS

- 2020-Present Biostatistics Certificate, University of Iowa

## PROFESSIONAL EXPERIENCE

### Academic Appointments

- 08/2022-Present Assistant Professor, University of Iowa, College of Nursing, Iowa City, IA  
10/2020-08/2022 Associate Faculty, University of Iowa, College of Nursing, Iowa City, IA  
09/2015-12/2019 Research Assistant, University of Iowa, College of Nursing, Iowa City, IA

### Clinical Appointments

- 2006-2015 Staff Nurse, Samsung Medical Center, Operating room, Seoul, South Korea

## HONORS AND AWARDS

- 2022 Teaching Development Summer Grant, University of Iowa College of Nursing  
2020 Ballard and Seashore Fellowship, University of Iowa Graduate College  
2019 The Myrtle Aydelotte Doctoral Education Fund in Nursing, University of Iowa College of Nursing  
2019 Digital Scholarship and Publishing Studio Fellowship, University of Iowa Graduate College  
2018 Graduate College Summer Fellowship, University of Iowa Graduate College  
2018 Sigma Theta Tau International Honor Society for Nursing Induction  
2017 Frontier Co-op-Tippie Impact Competition, Second place, University of Iowa College of Business  
2017 Travel Funds Award, University of Iowa, Graduate & Professional Student Government

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(GPSG)

2017 Travel Funds Award, University of Iowa, Graduate Student Senate (GSS)

2006 Honor Student Award, Korean Association of College of Nursing, South Korea

### SCHOLARSHIP

**Publications** [KEY: \* = data-based; bold = my authorship; underline = student/mentee]

#### *Peer Reviewed Papers*

1. \*Oh, H., Moorhead, S., **Chae, S.**, (2023). Validation of the Knowledge and Self-Management Outcomes for Adults with Cardiac Disease. *CIN: Computers, Informatics, Nursing*. [\[link\]](#) (IF: 1.985)
2. **Chae, S.**, Oh, H., Da Costa Ferreira Oberfrank, N., Schulman-Green, D., Moorhead, S., & Swanson, E. A. (2022). Linking nursing outcomes classification to the self- and family management framework. *Journal of Advanced Nursing*. 79, 832– 849. [\[link\]](#) (IF:4.3)
3. \*Song, J., **Chae, S.**, Bowles, K.H., McDonald, M.V., Barrón, Y., Cato, K., Rossetti, S.C., Hobensack, M., Sridharan, S., Evans. L., Davoudi A., & Topaz, M. (2022). The Identification of Clusters of Risk Factors and their Association with Hospitalization or Emergency Department Visits in Home Health Care. *Journal of Advanced Nursing*. 79, 593– 604. [\[link\]](#) (IF:4.3)
4. **Chae, S.**, Cherwin, C. H., Street, W. N., Moorhead, S., Brown G. & Gilbertson-White, S. (2022). Longitudinal Subgrouping of Patients with Cancer Based on Symptom Experiences: An Integrative Review. *Oncology Nursing Forum*. 49(4), E17–E30 [\[link\]](#) (IF:2.8).
5. \***Chae, S.**, Song, J., Ojo, M., Bowles, K. H., McDonald, M. V., Barrón, Y., Hobensack, M., Kennedy, E., Sridharan, S., Evans, L., & Topaz, M. (2022). Factors associated with poor self-management documented in home health care narrative notes for patients with heart failure. *Heart & Lung*, 55, 148-154. [\[link\]](#) (IF: 3.4)
6. \*Song, J., Hobensack, M., Bowles, K.H., McDonald, M.V., Cato, K., Rossetti, S.C., **Chae, S.**, Kennedy, E., Barrón, Y., Sridharan, S., & Topaz, M. (2022). Clinical Notes: An Untapped Opportunity for Improving Risk Prediction for Hospitalization and Emergency Department Visit during Home Health Care. *Journal of Biomedical Informatics*, 128, 104039. [\[link\]](#) (IF: 8.2).
7. Hobensack, M., Ojo, M., Barrón, Y., Bowles, K.H., Cato, K., **Chae, S.**, Kennedy, E., McDonald, M.V., Song, J., Sridharan, S., & Topaz, M. (2022). Documentation of Hospitalization Risk Factors in EHRs: A Qualitative Study with Home Healthcare Clinicians. *Journal of the American Medical Informatics Association*, 29(5), 805-812. [\[link\]](#) (IF: 9.6)
8. \*Song J, Ojo M, Bowles K, McDonald M, Cato K, Rossetti SC, Adams V, **Chae S**, Hobensack M, Kennedy E, Tark A, Kang MJ, Woo K, Barrón Y, Sridharan S, & Topaz M. (2021). Detecting Language Associated with Home Healthcare Patient's Risk for Hospitalization and

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Emergency Department Visit: A Natural Language Processing Study. *Nursing Research*, 71(4), 285-294. [\[link\]](#) (IF: 3.173)

9. \*Tark, A., Kamalumpundi, V., Song, J., **Chae, S.**, Stone, P. W., Gilbertson-White, S., & Buck, H. (2021). A Review of Web-Based COVID-19 Resources for Palliative Care Clinicians, Patients, and Their Caregivers. *Journal of Hospice and Palliative Nursing*, 23(4), 316-322. [\[link\]](#) (IF: 2.1)
10. \*Dunn Lopez, K., **Chae, S.**, Girgis, M., Fraczkowski, D. Habibi, P., Chattopadhyay, D., & Donevant, S. (2021). Improved Readability and Functions needed for MHealth targeting patients with heart failure: An app store review. *Research in Nursing and Health*, 44(1), 71-80. [\[link\]](#) (IF: 3.1)
11. \*Tark, A., Song, J., Parajuli, J., **Chae, S.**, & Stone, P. W. (2021). Are We Getting What We Really Want? A Systematic Review of Concordance Between Physician Orders for Life-Sustaining Treatment (POLST) Documentation and Subsequent Care Delivered at End-of-Life. *American Journal of Hospice and Palliative Medicine*, 38(9), 1142-1158. [\[link\]](#) (IF: 3.8)
12. **Chae, S.**, Oh, H., Moorhead, S. (2020). Effectiveness of nursing interventions based on nursing outcomes using standardized nursing terminologies: An Integrative review. *Western Journal of Nursing Research*. 42(11), [\[link\]](#) (IF: 3.2)
13. \*Steelman, V. M., **Chae, S.**, Duff, J., Anderson, M. J., & Zaidi, A. (2018). Warming of irrigation fluids for prevention of perioperative hypothermia during arthroscopy: A systematic review and meta-analysis. *Arthroscopy: The Journal of Arthroscopic & Related Surgery*, 34(3). [\[link\]](#) (IF: 5.973)
14. \*Downing, N. R., Goodnight, S., **Chae, S.**, Perlmutter, J. S., McCormack, M., Hahn, E., Barton, S. K., & Carlozzi, N. E. (2018). Factors associated with end-of-life planning in Huntington disease. *American Journal of Hospice and Palliative Care*, 35(3), 440-447. [\[link\]](#) (IF: 3.8)
15. \***Chae, S.**, Ko, I. S., Kim, I. S., & Yoon, K. S. (2015). Effect of perception of career ladder system on job satisfaction, intention to leave among perioperative nurses. *Journal of Korean Academy of Nursing Administration*, 21(3), 233. [\[link\]](#) (IF: 0.984)

### ***Peer-reviewed Conference Proceedings***

1. \*Hobensack, M., Song, J., **Chae, S.**, Kennedy, E., Zolnoori M., Bowles, K.H., McDonald, M.V., & Topaz, M. (November 2022). Capturing Concerns about Patient Deterioration in Narrative Documentation in Home Healthcare. *AMIA 2022 Annual Symposium*. (IF: 1.4)
2. \***Chae S.**, Song J, Ojo M, & Topaz M. (2021). Identifying Heart Failure Symptoms and Poor Self-Management in Home Healthcare: A Natural Language Processing Study. *Studies in Health Technology and Informatics*, 284, 15-19. [\[link\]](#) (IF: 1.4)

### ***Working Manuscripts/Planned Submissions***

1. \***Chae, S.**, Davoudi A., Song, J., Evans, L., Hobensack, M., Bowles, K. H., McDonald, M. V., Barrón, Y., Rossetti S., Cato K., Sridharan, S., & Topaz, M. (completed draft). Time-Sensitive Prediction Modeling Using Home Health Care Electronic Health Record Data Predicts ED Visits or Hospitalizations for Patients with Heart Failure. *Journal of the American Medical Informatics Association*
2. \***Chae S**, Street, W. N., Ramaraju, N. & Gilbertson-White, S. (completed draft). Prediction of cancer symptom trajectories using longitudinal EHR data and long short-term memory-based algorithm. *Journal of Clinical Oncology Clinical Cancer Informatics*
3. Oh, H., **Chae S.**, da Costa Ferreira Oberfrank. N., Moorhead, S. & Swanson. E., (completed draft). Expanding Conceptual Definitions and Recommendations for Advancing the Self- and Family Management Framework. *Journal of Family Nursing*

### ***Books/Book Chapters***

1. Moorhead, S., **Chae, S.**, & Oh, H. (2020). Impact of the Nursing Process and Clinical Decision-Making Models on Research Focused on the Linkages between Nursing Diagnoses, Outcomes and Interventions. In Echevarría, P. P., Giménez, F. M., Giró, F. M. D., & Romero, S. J. M. *Investigación en metodología y lenguajes enfermeros*, Chapter 23, second edition, Elsevier España, Barcelona. 2020.

### **Scientific and Educational Research Grants**

#### **Intramural Research Grants**

- 01/2023-01/2024 Symptoms and multiple chronic conditions associated with post-induction unplanned readmissions in patients with acute myeloid leukemia, Seeding Excellence Initiative-Office of the Vice President for Research Early Career Scholars, **PI: Chae**, University of Iowa Office of the Vice President for Research, \$30,000
- 02/2022-01/2024 Advancing symptom science using hidden symptoms and chronic conditions in patients with acute myeloid leukemia, Lila M Johnson Internal Grant, **PI: Chae**, University of Iowa College of Nursing, \$10,000
- 2019 Prediction of Cancer Symptom Trajectories using Longitudinal EHR Data and Long Short-Term Memory-Based Algorithm, Alma Miller Ware Nursing Endowment, **PI: Chae**, University of Iowa College of Nursing, \$3,000
- 2019 Comparison of Groups with Different Patterns of Symptom Cluster Intensity across the Cancer Treatment Trajectory, **PI: Chae**, University of Iowa Institute for Clinical and Translational Science, \$1,440

#### **Extramural Research Grants**

- 02/2022-01/2024 Advancing symptom science using hidden symptoms and chronic conditions in patients with acute myeloid leukemia, Center for Advancing Multimorbidity Science: Profiling risk and symptom expression to develop customized therapies for adults with multiple chronic conditions (CAMS) NIH / NINR 1 P20 NR018081-01

- (MPI: Gardner & Rakel), Pilot Grants, **PI: Chae**, University of Iowa College of Nursing, \$63,000
- 09/2020-2024 Homecare-CONCERN: Building risk models for preventable hospitalizations and emergency department visits in homecare, Agency for Healthcare Research and Quality, R01HS027742, (PI: Topaz), Visiting Nursing Service of New York, Columbia University, **Collaborator** (role: building natural language processing algorithms), \$369,427
- 2018 Warming of Irrigation Fluids for Prevention of Perioperative Hypothermia During Arthroscopy: A Systematic Review and Meta-analysis, PI: Steelman, **Research team member**, Sigma Theta Tau/Association of Perioperative Registered Nurses, \$5,000

**Research and Clinical Presentations** [KEY: \* = data-based; bold = my authorship; underline = student/mentee]

### **International**

- 2023 \*Dunn Lopez, K., **Chae, S.**, Litwiller, D., Wagner, C., Moorhead, S., and Swanson, E. (March 2023). Searching For Nurse Generated Interventions from Medical-Surgical Nurses' Documentation of Care provided to Patients with Covid-19 in Large Vendor's Electronic Health Record's Flowsheets. Paper presentation at ACENDIO Conference. Rome, Italy.
- 2022 \***Chae, S.**, Song, J., Barrón, Y., Bowles, K.H., McDonald, M.V., Rossetti S., Cato K., Hobensack, M., Evans. L., & Topaz, M. (2022). Heart Failure Patient Characteristics and Symptoms Documented in Home Health Care Clinical Notes Associated with Emergency Department Visits and Hospitalizations. Podium presentation at AMIA 2022 Annual Symposium, Washington, DC
- 2022 \***Chae, S.**, Dunn Lopez, K., & Rakel, B. (2022). A First Step to Uncovering Hidden Symptoms and in Patients with Acute Myeloid Leukemia using Natural Language Processing. Poster presentation at AMIA 2022 Annual Symposium, Washington, DC
- 2021 \*Hobensack, M., Song, J., Zolnoori, M., Ojo, M., Bowles, K.H., **Chae, S.**, Kennedy., McDonald, M.V., & Topaz, M. (2021). Identifying Narrative Documentation of Clinician Concern about Patient Deterioration in Home Healthcare: A Text Mining Study. Poster presentation at AMIA 2021 Annual Symposium, San Diego, CA
- 2021 \*Song J., Ojo M., McDonald M.V., Cato K, Rossetti S., Barrón Y., Sridharan S., **Chae S.**, Hobensack M., Bowles K. H., & Topaz M. (2021). Developing a Natural Language Processing Algorithm to Detect Terms Representing Risk of Hospitalization or Emergency Department Visits during Home Health Care. Poster presentation at AMIA 2021 Annual Symposium, San Diego, CA
- 2021 \*Dunn Lopez, K., Swanson, E., **Chae, S.**, Litwiller, D., Moorhead, S., Wagner, C., and Abe, N. (2021). Unearthing nursing documentation within electronic health record data to determine the impact of nursing care for hospitalized patients with COVID-19, Work in Progress. Poster presentation at Health Information Management System and Society. Global Health Conference, Nursing Informatics Symposium. Las Vegas, NV
- 2021 \*Song J., McDonald M., Barrón Y., Cato K, Rossetti SC., Sridharan S., **Chae S.**, Tark A., Adams V., Woo K., Kang MJ., Hobensack M., Ojo M., Bowles K., & Topaz M. (2021). Identifying factors associated with patient's risk for hospitalization or emergency department visits in home health care. Conference presentation abstract at AMIA Clinical Informatics Conference; 2021 Mar 22-25.

- 2020 Gilbertson-White, S., Srivastava, S. Li, Y., Laures, E., Saeidzadeh, S., Yeung, C., **Chae, S.** (2020) Data mining and the electronic health record: Identify multimorbidity phenotypes to advanced cancer symptom science. The ONS 45th Annual Congress. San Antonio, TX (CANCELED d/t Covid).
- 2020 Gilbertson-White, S., Srivastava, S. Li, Y., Laures, E., Saeidzadeh, S., Yeung, C., **Chae, S.** (2020) Multimorbidity and Cancer: Using Electronic Health Record (EHR) Data to Cluster Patients in Multimorbidity Phenotypes. The 2020 Annual Assembly of Hospice and Palliative Care. San Diego, CA (CANCELED d/t Covid).
- 2020 Gilbertson-White, S., Srivastava, S. Li, Y., Laures, E., Saeidzadeh, S., Yeung, C., **Chae, S.** (2020) Multimorbidity and Cancer: Using Electronic Health Record (EHR) Data to Cluster Patients in Multimorbidity Phenotypes. The Inaugural State of the Science in Hospice and Palliative Care Meeting. San Diego, CA (CANCELED d/t Covid).
- 2018 **Chae, S.**, Oh, H. K., & Moorhead, S. Effectiveness of nursing interventions - using standardized nursing languages: An integrative review. American Medical Informatics Association Symposium 2018, San Francisco, CA. Peer reviewed poster.
- 2017 \***Chae, S.**, Steelman, V. M., & Chung, S. J. Simulation-based education in the operating room. Association of perioperative Registered Nurses Global Surgical Conference & Expo 2017. Boston, MA. Peer reviewed poster.
- 2016 \*Downing, N. R., **Chae, S.**, Goodnight, S., & Carlozzi, N.E. Factors associated with end-of life planning in Huntington disease. International Society of Nurses in Genetics. Dublin, Ireland. Podium Presentation.
- 2014 \***Chae, S.**, Ko, I. S., & Kim, I. S. Relation between perception of the Career Ladder System, job satisfaction, and intention to leave among perioperative nurses. Sigma Theta Tau. International 25th International Nursing Research Congress, Hong Kong. Peer reviewed poster

### **National**

- 2014 \***Chae, S.**, Ko, I. S., & Kim, I. S. Relation between perception of the Career Ladder System, job satisfaction, and intention to leave among perioperative nurses. Korea Association of Operation Room Nurses. KwangJu, South Korea. Oral presentation.

### **State/Regional**

- 2023 \***Chae, S.**, Bae, J & Rakel, B., (2023). Agreement between patient-report and electronic health record on symptoms of acute myeloid leukemia. Poster presentation. Midwestern Nursing Research Society's 47th Annual Research Conference, Des Moines, IA.
- 2022 \*Song, J., **Chae, S.**, Bowles, K. H., McDonald, M.V., Barron, Y., Cato, K., Rossetti, S., Hobensack, M., Sridharan, S., Evans, L., Davoudi, A., & Topaz, M. The Identification of Clusters of Risk Factors and their Association with Hospitalizations or Emergency Department Visits in Home Health Care, Poster presentation at the 1st annual PhD and Post-Doctoral Fellow Scholars' Day, Columbia University School of Nursing, NY
- 2020 \*Dunn Lopez, K., **Chae, S.**, Girgis, M., Fraczkowski, D. Habibi, P., Chattopadhyay, D., & Donevant, S.B. Improved Readability and Functions needed for mHealth targeting patients with heart failure: An app store review. A Distinguished Abstract. Midwest Nursing Research Society's 44th Annual Research Conference, Chicago, IL. Peer reviewed postcard.
- 2020 \***Chae, S.**, Gilbertson-White, S., Street, W. N., & Ramaraju, N. Prediction of cancer symptom trajectories using longitudinal EHR data and long short-term memory-based algorithm. Student Poster Competition. Midwestern Nursing Research Society's 44th Annual Research

Conference, Chicago, IL. Peer reviewed poster.

- 2019 \***Chae, S.**, Gilbertson-White, S., Street, W. N., Moorhead, S., & Wang, S. Comparison of groups with different patterns of symptom cluster intensity across the Cancer Treatment Trajectory. Student Poster Competition. Midwestern Nursing Research Society's 43rd Annual Research Conference. Kansas City, MO. Peer reviewed poster.
- 2018 \***Chae, S.**, Steelman, V. M., Duff, J., Anderson, M. J., & Zaidi, A. Warming of irrigation fluids for prevention of perioperative hypothermia during arthroscopy: A systematic review and meta-analysis. Student Poster Competition. Midwestern Nursing Research Society's 42nd Annual Research Conference, Cleveland, OH. Peer reviewed poster.
- 2017 **Chae, S.**, Moorhead, S., & Oh, H. K. The use of Nursing Interventions and Outcomes Classifications focused on effectiveness: An integrative review. Midwestern Nursing Research Society's 41st Annual Research Conference, Minneapolis, MN. Peer reviewed poster.

### **Local**

- 2022 **Chae, S.** Conceptual Models in the "Informatics" Based Research, Theory and Model Development, PhD program, University of Iowa College of Nursing, Invited Speaker
- 2020 **Chae, S.** A spotlight on CON PhD student research, Research Forum, University of Iowa College of Nursing, Invited Speaker
- 2019 **Chae, S.** Data Science, Research Design, PhD program, University of Iowa College of Nursing, Invited Speaker
- 2019 **Chae, S.** Discussion using EHR data, CAMS Research Seminar, University of Iowa College of Nursing, Invited Speaker
- 2019 **Chae, S.** Discussion on Scholarly Writing, PhD Student Orientation, University of Iowa College of Nursing, Invited Speaker
- 2019 \***Chae, S.**, Comparison of groups with different patterns of symptom cluster intensity across the Cancer Treatment Trajectory. Spring Reception of the Center for Advancement Board of Directors, Iowa City, IA. University of Iowa College of Nursing. Poster
- 2019 \***Chae, S.**, Prediction of cancer symptom trajectories using longitudinal EHR data and long short-term memory-based algorithm, Data Mining Iowa Group, University of Iowa Tippie College of Business. Invited Speaker
- 2018 **Chae, S.**, Using NANDA-I, NIC and NOC, Samsung Medical Center, Health Informatics Department, Seoul, South Korea. Invited Speaker
- 2018 \***Chae, S.**, & Steelman, V. M. Warming of irrigation fluids for prevention of perioperative hypothermia during arthroscopy: A systematic review and meta-analysis. Research Forum. University of Iowa College of Nursing, Iowa City, IA, Invited Speaker

### **SERVICE**

#### **Editorial and Peer Review Service**

##### **Peer review of scholarly products**

- 2018-present American Medical Informatics Association, Annual Symposium, Abstract Reviewer
- 2021 American Journal of Hospice and Palliative Medicine, Manuscript Reviewer
- 2021 Birth, Manuscript Reviewer
- 2022 Journal of the American Heart Association, Manuscript Reviewer
- 2022 International Journal of Nursing Knowledge, Manuscript Reviewer
- 2022 International Journal of Nursing Studies, Manuscript Reviewer

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## **Professional Service**

### **Society/Association membership, participation, and leadership**

- 2019 Global Korean Nursing Foundation (GKNF)-USA, Student member  
2018-present American Medical Informatics Association, member  
Nursing Informatics Working Group (2021-present)  
2018-present Sigma Theta Tau International Honor Society for Nursing, Gamma Chapter, member  
2017 Association of Perioperative Registered Nurses, Student member  
Poster Judge, Global Surgical Conference & Expo 2016 (2016)  
2016-present Midwest Nursing Research Society, member  
Symptom Science Research Interest Group, member (2019-present)  
2008-2015 Korean Academy of Nursing Administration, member  
2006-2015 Korean Association of Operating Room Nurses, member  
2006-2015 Korean Nurses Association, member
- 2020 Preparing for Graduate Nursing School in the US, International Nursing Leaders Association  
Guest lecturer

## **Collegiate and University Service**

### ***CHA University***

- 2017 CHA Global Health Program, CHA University, South Korea, Interpreter

### ***University of Iowa***

- 2022-present Holden Comprehensive Cancer Center at The University of Iowa, Associate Member  
2022 Spring Undergraduate Research Festival (SURF) Judge  
2021-present Pain and Associated Symptoms: Nurse Research Training (T32NR011147), junior faculty

### ***University of Iowa Hospitals and Clinics***

- 2022-present Department of Nursing Services and Patient Care, University of Iowa Hospitals and Clinics, Adjunct position of Assistant Professor

## **TEACHING**

### **Instructional Activities**

#### **Course Instruction**

*NURS:5010 Clinical Data Management and Evaluation. Graduate.*

- 2022 Fall (enrollment = 38)  
2022 Spring (enrollment = 19)  
2021 Fall (enrollment = 20)  
2021 Spring (enrollment = 46)  
2020 Fall (enrollment = 45)



## **Guest Lectures**

*NURS:3438 Nursing and Pharmacological Intervention, Perioperative Nursing.* Undergraduate  
2018 Spring – 2021 Fall [total number of semesters: 8]

## **Mentoring and Advisement**

### **Mentoring**

#### *Undergraduate students*

2022 Fall	Clarie Brown, BSN student, participated in my research team
2022	Marisa K Mueterthies, BSN student, participated in my research team
2021 Fall	Kelly Bush, BSN student, participated in my research team
2019 Summer	Prisca Anugom, Pre-nursing student, participated in my study, Longitudinal subgrouping of cancer patients with similar symptom experiences: an integrated review

#### *Graduate students*

2022 Fall-Present	Jaewon Bae, Nursing PhD student, participate in my research team
2022 Fall-Present	Pratik Maitra, Masters' student in Computer Science, participate in my research team