

T32 Postdoctoral Research Fellow in Nursing, AI, and Health Data Science

Lab	SpeechCARE Lab
Institution	Columbia University School of Nursing / Columbia University Irving Medical Center

Position Summary

The SpeechCARE Lab at Columbia University School of Nursing is seeking a highly motivated Postdoctoral Research Fellow to contribute to NIH-funded research focused on artificial intelligence, large language models (LLMs), speech processing, natural language processing, and early detection of cognitive impairment in real-world healthcare settings.

This position is designed for candidates with:

- A strong nursing foundation, training or experience in data science and clinical informatics, and interest in cognitive aging and patient-clinician communication.
- A PhD or equivalent doctoral degree in nursing, medical/clinical informatics, biomedical informatics, information science, data science, computer science, public health, or a related field.
- For applicants whose PhD training is outside nursing, formal nursing education at the bachelor's or master's level is required for the School of Nursing T32 program.
- Applicants must meet NIH T32 eligibility requirements, including being a U.S. citizen or lawful permanent resident at the time of appointment.

Research Environment and Opportunity

The SpeechCARE Lab is a funded, award-recognized research group developing AI-based methods from real-world patient-clinician communication, speech, language, clinical notes, and EHR data to support earlier detection of mild cognitive impairment and early dementia. The lab's work has been supported by NIH/NIA funding and recognized through the NIA PREPARE Challenge. The fellow will contribute to active studies with clear scholarly outputs, including peer-reviewed manuscripts, conference presentations, and future grant applications. The position also provides close mentorship and opportunities to build an independent research program at the intersection of nursing, clinical informatics, large language models, speech AI, cognitive aging, and health equity.

Required Qualifications

- PhD or equivalent doctoral degree in nursing, medical/clinical informatics, biomedical informatics, information science, data science, public health, computer science, or a related field. For applicants whose PhD training is outside nursing, formal nursing education at the bachelor's or master's level is required for the School of Nursing T32 program.
- Experience with Python programming and training in data science, statistics, machine learning, informatics, or related areas.
- Familiarity with large language models (LLMs) and their applications in healthcare.
- Demonstrated interest in AI in healthcare, clinical informatics, cognitive aging, and real-world AI implementation.
- At least two first-author publications, preferably focused on applying or developing AI methods to address healthcare problems.
- Strong communication skills and ability to work independently and collaboratively in an interdisciplinary research environment.

Preferred Qualifications

- Experience with clinical data, EHR data, patient-clinician communication, speech data, or transcripts.
- Experience with LLMs, transformer-based models, qualitative research, mixed methods, clinical workflow analysis, or implementation science.

Key Responsibilities

- Contribute to NIH/NIA-funded studies on AI-based detection of cognitive impairment using speech, language, patient-clinician communication, and clinical data.
- Support the development, evaluation, and interpretation of machine learning, speech-processing, and large language model approaches.

- Apply nursing and clinical knowledge to interpret patient communication, clinical workflows, and healthcare documentation.
- Support qualitative research activities, including interview guide development, interviews, summaries, coding, and thematic analysis.
- Contribute to IRB documents, manuscripts, conference presentations, progress reports, and grant-related materials.
Participate in lab meetings, training activities, and interdisciplinary collaborations, and support students or research assistants involved in lab research activities.

Work Environment

This is an in-person position based at Columbia University School of Nursing. Appointment duration and renewal will follow T32 program and institutional requirements. The fellow will participate in SpeechCARE Lab activities and interdisciplinary collaborations across Columbia University School of Nursing, the Columbia Aging Center, and VNS Health home healthcare settings.

Application Materials

Interested candidates should submit a CV, a brief cover letter describing their research interests and relevant experience, two writing samples or publications, and the names and contact information of two references.

Applicants should also complete the Reducing Health Differences Through Informatics (RHeaDI) Fellowship Program application form using the link below:

[**CLICK HERE TO COMPLETE THE RHeaDI FELLOWSHIP PROGRAM APPLICATION FORM**](https://cumc.co1.qualtrics.com/jfe/form/SV_b8cpAZnyl17VG9U)

Link: https://cumc.co1.qualtrics.com/jfe/form/SV_b8cpAZnyl17VG9U

For any questions about the position, please contact Dr. Maryam Zolnoori at mz2825@cumc.columbia.edu.