PREP Research Associate

This position is part of the National Institute of Standards (NIST) Professional Research Experience (PREP) program. NIST recognizes that its research staff may wish to collaborate with researchers at academic institutions on specific projects of mutual interest, thus requires that such institutions must be the recipient of a PREP award. The PREP program requires staff from a wide range of backgrounds to work on scientific research in many areas. Employees in this position will perform technical work that underpins the scientific research of the collaboration.

Research Title:
Indoor Localization, Tracking, and Navigation

The work will entail:

- Basic research leading to the development of novel indoor localization and tracking methods, algorithms, and systems
- Evaluating the performance of such methods, algorithms, and systems via modeling and simulation
- Performance evaluation via the development of system prototypes, when warranted
- Test and evaluation of commercial-off-the-shelf (COTS) indoor localization solutions
- Literature survey of pedestrian navigation techniques in indoor environments
- Assessment of the efficacy of 5G wireless technology and indoor localization techniques, particularly in the context of public safety scenarios

Key responsibilities will include, but are not limited to:

- Reading scholarly papers on indoor localization and understanding their contributions and how the proposed systems work
- Writing code for modeling, simulation, and performance evaluation of indoor localization systems
- Developing novel indoor localization systems
- Publishing the research results and making technical presentations on the work done
- Ensuring that results, protocols, software, and documentation have been archived or otherwise transmitted to the larger organization

<u>Qualifications</u>

- US Citizen Preferred
- A doctoral degree in electrical engineering, computer science, or other related fields is preferred but not required.
- The prospective applicant does not have to be an expert in localization. However, good knowledge of wireless communications, digital signal processing, and computer algorithms is required. If necessary, the applicant selected for the position will be trained in indoor localization.
- Proficiency in programming languages such as C/C++, Python, and MATLAB is required, along with good computing skills.
- Strong oral and written communication skills.
- The ability to develop prototypes of indoor localization systems is a plus.

Privacy Act Statement

Authority: 15 U.S.C. § 278g-1(e)(1) and (e)(3) and 15 U.S.C. § 272(b) and (c)

Purpose: The National Institute for Standards and Technology (NIST) hosts the Professional Research Experience Program (PREP) , which is designed to provide valuable laboratory experience and financial assistance to undergraduates, post-bachelor's degree holders, graduate students, master's degree holders, postdocs, and faculty.

PREP is a 5-year cooperative agreement between NIST laboratories and participating PREP Universities to establish a collaborative research relationship between NIST and U.S. institutions of higher education in the following disciplines including (but may not be limited to) biochemistry, biological sciences, chemistry, computer science, engineering, electronics, materials science, mathematics, nanoscale science, neutron science, physical science, physics, and statistics. This collection of information is needed to facilitate the administrative functions of the PREP Program.

Routine Uses: NIST will use the information collected to perform the requisite reviews of the applications to determine eligibility and to meet programmatic requirements. Disclosure of this information is also subject to all the published routine uses as identified in the Privacy Act System of Records Notices: NIST-1: NIST Associates.

Disclosure: Furnishing this information is voluntary. When you submit the form, you are indicating your voluntary consent for NIST to use the information you submit for the purpose stated.