Research Title:
Reference Material creation to Calibrate AI Solutions across labs

Overview:

ITL's role in the IMS project "Distributed Manufacturing of First-In-Class NIST Traceable Active Cell Reference Materials" involves the following tasks: (1) the design and training of convolutional neural networks (CNN) for cell segmentation, cell division detection across time, and label-free cell viability assessment under different imaging modalities, and (2) the design of reference materials with which to transfer AI models across labs. Our success depends upon the availability of highly skilled domain experts. We are challenged with difficult tasks that require not only expertise in running different types of CNNs, but also in designing new architectures for applications where training data is scarce but high accuracy is paramount.

Duties:

- Developing new AI architectures for cell segmentation and cell division through time.
- Creating custom built reference materials and measurement strategies to transfer the AI solutions between labs for specific cell-based assay experiments.
- Produce high-quality publications based on research and results present at internal and external meetings and conferences.

Qualifications:

- US citizenship is preferred.
- A PhD degree in Computer Science with 3 or more years of relevant experience.
- Expertise in Pytorch/Python and state of the Art AI models like vision transformers and advanced CNNs.
- Ability to build deployable complex software solutions for cell image analysis.
- Strong oral and written communication skills and strong presentation skills.

Employment Terms

- This opportunity is to be an associate researcher in the NIST Applied AI Group for a term of 2 years, with options to renew and/or pursue longer term federal employment. Associate researchers are NOT Federal Employees, but they work aside NIST researchers. Relocation expenses will not be provided.
- Salary commensurate with experience, between $78,000 - $83,000

How to express interest

Candidates who meet all of the required qualifications are invited to express their interest in the position by sending an updated CV to Emma.Natal@nist.gov and Joe.Chalfoun@nist.gov