

Research Engineer - Center for Applied Brain and  
Cognitive Sciences  
Tufts University

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Posted Dec. 21, 2022, set to expire Dec. 31, 2023

<b>Job Title</b>	Research Engineer - Center for Applied Brain and Cognitive Sciences
<b>Department</b>	
<b>Institution</b>	Tufts University Medford, Massachusetts
<b>Date Posted</b>	Dec. 21, 2022
<b>Application Deadline</b>	Open until filled
<b>Position Start Date</b>	Available immediately
<b>Job Categories</b>	Professional Staff
<b>Academic Field(s)</b>	Research/Technical/Laboratory
<b>Job Website</b>	<a href="https://jobs.tufts.edu/jobs/18088?lang=en-us&amp;iis=Job+Board&amp;iisn=AcademicKeys">https://jobs.tufts.edu/jobs/18088?lang=en-us&amp;iis=Job+Board&amp;iisn=AcademicKeys</a>
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<b>Job Description</b>	

## Overview

The Center for Applied Brain and Cognitive Sciences (CABCS) at Tufts University and the Tufts Institute for Artificial Intelligence (TIAI) has openings for researchers to engage in cross-cutting projects funded by the US Army focusing on the development of “precision” models and algorithms with applications in assessment and prediction of soldier performance. This area is seeing an explosion in the types and quantities of information that can be collected to provide insight into various aspects of human physiology and psychology. The US Army is eager to use these data to understand the dynamics of a wide variety of processes taking place both within and between people and make timely and accurate predictions at the scale of the individual. The characteristics of the data however render traditional analysis methods, largely concerned with population level statistics, inadequate. Many of these challenges arise from issues of heterogeneity. Some sources such as wearables provide data continuously. Others yield measurements at only a few discrete points in time (e.g., biomarkers derived from saliva samples) while audio and video are examples of data that may be provided in noncontiguous intervals of varying length. Most of these data are only indirectly related to the phenomena of interest with no explicit model linking

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the two as is the case for student work in the context of learning, electronic medical records for nutrition or medicine, or the results of questionnaires in all applications of interest. Finally, although the quantity of data collected about any one individual may be relatively large, practical considerations make the number of participants associated with most studies relatively small, on the order of tens at most making these simultaneously “big” and “small” data problems.

### What You'll Do

We are looking for individuals to help develop solutions to the problems outlined above. Successful candidates will have a BS or MS in a quantitative discipline such as applied mathematics, statistics, signal processing, machine learning, or physics with a track record of experience applying these methods to real-world problems.

- Work with CABCS and US Army researchers to define data analysis tasks. CABCS and US Army researchers have large variety of human subject data sets (wearables, survey data, omics, biomarker, etc.) collected over the past five years under a variety of projects that are in need of analysis. There is a need to work with these domain specialists to define precisely the problems to be solved (e.g., classification, regression, clustering, etc.) including the data that will be used as “input” and the quantities that will be produced as “output.”
- Data wrangling and cleaning: work with CABCS scientists to take their raw data and place it in a form that is appropriate for processing and modeling
- Algorithm development and performance verification: apply existing methods to solve the problem or, if needed, extend and develop new techniques.
- Document results in reports and presentations

### What We're Looking For

#### Basic Requirement

- BA or BS in Psychology with a strong experimental background and experience working in a laboratory setting managing and conducting human subjects research.
- BS in Applied Mathematics, Statistics, Electrical Engineering, Computer Science, Data Science
- Class or project experience using python, Julia, or a similar software environment to solve machine learning problems.

#### Preferred Qualifications

- MS in Applied Mathematics, Statistics, Electrical Engineering, Computer Science, Data Science
- One to two years of experience in machine learning or data science

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**When applying please upload a copy of your CV, a list of references, a cover letter, and copies of any relevant articles, theses, technical reports etc.**

**“This is a one year limited term appointment with the opportunity of possible renewal based on funding and continued successful performance in the role.”**

### **Contact Information**

Please reference Academickeys in your cover letter when applying for or inquiring about this job announcement.

### **Contact**