Opportunity Title: Endogenous and exogenous sources of variability in visual perception

Opportunity Reference Code: ARL-R-HRED-6467842718

Organization	U.S. Army
Reference Code	ARL-R-HRED-6467842718
How to Apply	[You can apply for this project directly at this link.](#)

Description

The Human Research and Engineering Directorate (HRED) is ARL's principal center for research and development directed toward optimizing soldier performance and man-machine interactions. The HRED examines human performance in the perceptual, cognitive, and psychomotor domains in order to increase the body of knowledge of human capabilities and limitations, and to assess the impact of emerging technologies on soldier performance. Research is conducted on intelligent decision aids and interfaces; human control of automated systems; control display and workstation design; and MANPRINT design, analysis, and integration methods. In addition, the HRED develops unique and innovative methods, tools, models, and simulations for measuring and characterizing soldier performance.

Understanding how naturalistic search behavior is guided by the relative influence of task specific demands and features of the environment is critical to interpreting visual perception in real world settings. This research opportunity will address critical gaps in our understanding concerning the interactive role of visual salience (bottom-up), task goals (top-down), and arousal (internal state) on target detection during overt visual search. Successful candidates will be involved in all aspects of scientific process from experimental design, data acquisition and analysis, and presentation and publication of results. This project will leverage behavioral, eye tracking, and electophysiological methods to systematically investigate visual perception using both constrained and real-world tasks, leading to an enhanced understanding of visual search in everyday environments.
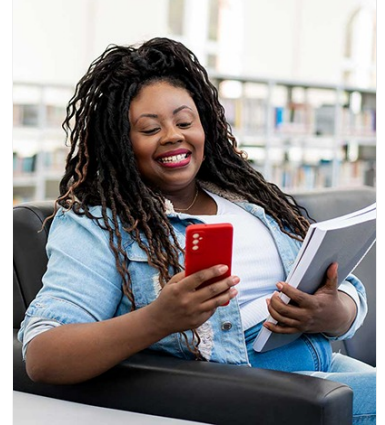
Keywords: visual search, eye tracking, real world, cognitive neuroscience, target detection, EEG, visual perception

Qualifications

[Please review eligibility for the Army Research Lab (ARL) Research Associateship Program (RAP) on the program website.](#)

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Master's Degree or Doctoral Degree.
- **Discipline(s):**
  - **Computer, Information, and Data Sciences** (1 👁)
  - **Engineering** (2 👁)
  - **Life Health and Medical Sciences** (1 👁)
  - **Mathematics and Statistics** (1 👁)