Opportunity Title: Computer Scientist Fellowship
Opportunity Reference Code: ERDC-ITL-2024-0004

Organization	U.S. Department of Defense (DOD)
Reference Code	ERDC-ITL-2024-0004
How to Apply	Click on *Apply* now to start your application.

Description

The US Army Engineer Research and Development Center (ERDC) is an integral component of the Office of the Assistant Secretary of Defense for Research and Engineering and helps solve our Nation's most challenging problems in civil and military engineering, geospatial sciences, water resources, and environmental sciences for the Army, Department of Defense, civilian agencies, and our Nation's public good. ERDC strives to be the world's premier public engineering and environmental sciences research and development organization. Research and development are categorized into five major areas, which are Military Engineering, Installations and Operational Environments, Civil Works, Geospatial Research and Engineering, and Engineered Resilient Systems.

The ERDC Information Technology Laboratory (ITL), located in Vicksburg, MS is a premier Department of Defense laboratory engaged in the creation and application of advanced information technology in support of the Warfighter and the Nation. ITL conducts research and development in informatics and computational science and engineering with particular emphasis on high-performance computing, computer-aided and interdisciplinary engineering, computer science, and instrumentation systems. The laboratory provides unmatched expertise in areas of data science, high-performance data analytics, software engineering, augmented and virtual reality, artificial intelligence and machine learning, cyber security, and edge HPC.
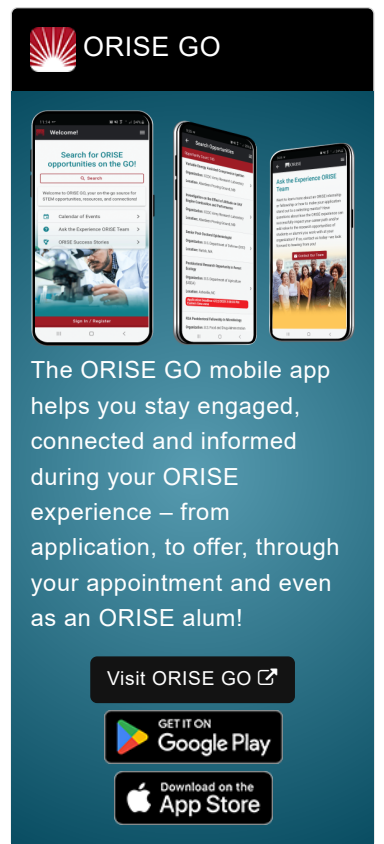
What will I be doing?

Under the guidance of a mentor, you will engage in research by assessing existing tools available and collaborating with others in the development of an end-to-end pipeline for multi-video sensor devices to edge HPC streaming data analytics, additionally including model development (i.e., model training) using the data-driven approach, model conversion for edge devices, model verification and validation at the edge, model integration with the pipeline, and continuous learning. The goal is to raise situational awareness as soon as possible when the anomaly process is detected on one or more of the sensor devices. Ideally, you will complement the research team by providing an understanding of the unique streaming challenges such as data privacy, data heterogeneity, transmission bandwidth limitation, autocorrelation, and different sampling intervals. You will also have opportunities to investigate the performance enhancement on GPUs and advanced devices such as brain-inspired chips, neuromorphic chips, and analog in-memory compute, etc. The project will allow ERDC ITL to have increased abilities in the fields of video analytics, real-time detection and dissemination, adaptive decisions, sensor fusion, and even continuous learning on edge HPC and edge devices. You will benefit from exposure to a multi-disciplinary team and the opportunity to learn about applied research within the agency. You will have the opportunity to co-author reports and presentations through this project.

Where will I be located? Vicksburg, Mississippi

Why should I apply?

This fellowship provides the opportunity to independently utilize your skills and engage with experts in innovative ideas to move the proposed research forward.

What is the anticipated start date?

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ERDC-ITL is ready to make an appointment immediately. The exact start date will be determined at the time of selection and in coordination with the selected candidate.

What is the appointment length?

This appointment is a full-time up to twelve months research appointment. Appointments may be extended depending on funding availability, project assignment, program rules, and availability of the participant.

What are the benefits?

You will receive a stipend to be determined by ERDC-ITL. Stipends are typically based on a participant's academic standing, discipline, experience, and research facility location. Other benefits may include the following:

- Health Insurance Supplement (*Participants are eligible to purchase health insurance through ORISE)*
- Relocation Allowance
- Training and Travel Allowance

About ORISE

This program, administered by Oak Ridge Associated Universities (ORAU) through its contract with the U.S. Department of Energy (DOE) to manage the Oak Ridge Institute for Science and Education (ORISE), was established through an interagency agreement between DOE and DoD. Participants do not enter into an employee/employer relationship with ORISE, ORAU, DoD or any other office or agency. Instead, you will be affiliated with ORISE for the administration of the appointment through the ORISE appointment letter and Terms of Appointment. Proof of health insurance is required for participation in this program. Health insurance can be obtained through ORISE. For more information, visit the ORISE Research Participation Program at the U.S. Department of Defense.

Qualifications You should have at least a bachelor's degree in computer science, computational science, or a similar discipline. You should be equipped with programming skills in (1) pipeline-based multimedia frameworks (e.g., GStreamer) from sensor devices to edge HPC and in HPC streaming data analytics, (2) model development using data-driven approach from various data sources taken in air or under water, (3) benchmarking edge devices, or (4) model verification and validation at the Edge.

Application Requirements

A complete application consists of:

- Zintellect Profile
- Educational and Employment History
- Essay Questions (goals, experiences, and skills relevant to the opportunity)
- Resume (PDF)
- Transcripts/Academic Records - For this opportunity, an official transcript or copy of the student academic records printed by the applicant or by academic advisors from internal

institution systems may be submitted. [Click here for detailed information about acceptable transcripts](#).

- One recommendation. We encourage you to contact your recommender(s) as soon as you start your application to ensure they are able to complete the recommendation form and to let them know to expect a message from Zintellect. Recommenders will be asked to rate your scientific capabilities, personal characteristics, and describe how they know you. You can always log back in to your Zintellect account and check the status of your application.

Submitted documents must have all social security numbers, student identification numbers, and/or dates of birth removed (blanked out, blackened out, made illegible, etc.) prior to uploading into the application system. All documents must be in English or include an official English translation. If you have questions, send an email to USACE@orise.orau.gov. Please list the reference code of this opportunity in the subject line of the email. Please understand that ORISE does not review applications or select applicants; selections are made by the sponsoring agency identified on this opportunity. All application materials should be submitted via the "Apply" button at the bottom of this opportunity listing. Please do not send application materials to the email address above.

Connect with ORISE...on the GO! Download the new ORISE GO mobile app in the [Apple App Store](#) or [Google Play Store](#) to help you stay engaged, connected, and informed during your ORISE experience and beyond!

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Bachelor's Degree, Master's Degree, or Doctoral Degree received within the last 60 months or currently pursuing.
- **Discipline(s):**
  - **Computer, Information, and Data Sciences** (17 👁)
  - **Engineering** (27 👁)
- **Age:** Must be 18 years of age