Opportunity Title: AFIT: Summer 2024 Internship with Multi-Modal Integration Group

Opportunity Reference Code: AFIT-2024-0005
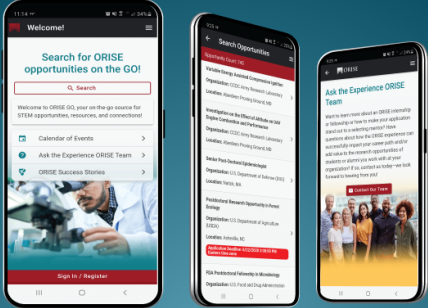
Organization	U.S. Department of Defense (DOD)
Reference Code	AFIT-2024-0005
How to Apply	Click on *Apply* at the bottom of the opportunity to start your application.
Application Deadline	4/30/2024 3:00:00 PM Eastern Time Zone

Description

The Air Force Institute of Technology is offering an undergraduate or graduate student Summer 2024 Internship opportunity at Wright Patterson Air Force Base, Ohio.

What will I be doing?

As an Oak Ridge Institute for Science and Education (ORISE) participant, you will join a community of scientists and researchers in an effort to investigate one of the following research areas:

1. Multi-Modal Federated Learning of Cyber Systems: Dive into the cutting-edge field of federated learning to enhance operational security and privacy in cyber systems. Opportunities include enhancing federated learning frameworks in cases where there is multimodal data, heterogeneous clients, and little to no labeled information available.

2. Multimodal Image Registration/Anomaly Detection of Aircraft Titanium Metal with AFRL/RX: Engage in groundbreaking research aimed at detecting microtexture regions in titanium metal of aircraft through image fusion technologies. This project offers the chance to collaborate with AFRL/RX Materials Science Division and contribute to improving the safety and reliability of aircraft materials.

Why should I apply?

Under the guidance of a mentor, you will gain hands-on experience to complement your education and support your academic and professional goals. Along the way, you will engage in activities and research in several areas. These include, but are not limited to:

- Conducting rigorous research and developing models in one of the specified research areas
- Collaborating with a team of experts and contributing to interdisciplinary projects
- Presenting findings and progress in lab meetings and possibly at national conferences
- Researching real-world problems with direct applications to national security
- Gaining exposure to a network of professionals in academia, military, and industry

Where will I be located? Dayton, Ohio

What is the anticipated start date?

Exact start dates will be determined at the time of selection and in coordination with the selected candidate. Applications are reviewed on an ongoing basis and internships or fellowships will be filled as qualified candidates are identified.

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What is the appointment length?

This appointment is a Summer 2024 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 AFIT. 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 AFIT

The Air Force Institute of Technology, or AFIT, located at Wright-Patterson Air Force
Base, Ohio, is the Air Force's graduate school of engineering and management as
well as its institution for technical professional continuing education. A component of
Air University and Air Education and Training Command, AFIT is committed to
providing defense-focused graduate and professional continuing education and
research to sustain the technological supremacy of America's air, space and cyber
forces.

The Multi-Modal Integration Group at the Air Force Institute of Technology (AFIT) is
dedicated to addressing complex multi-modal integration problems in military
applications and beyond. Our group, led by Dr. Nathan Gaw and Maj Chancellor
Johnstone, focuses on the development of state-of-the-art models that contribute to
the theoretical and practical advancements in machine learning.

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   The qualified candidate will be currently pursuing a bachelor's, master's degree or
doctoral degree in data science, computer science, industrial engineering, or a
related field.

Highly competitive applicants will have education and/or experience in one or more

of the following:

- Strong foundation in machine learning, data analysis, and programming (Python, MATLAB, R, etc.)
- Excellent analytical, problem-solving, and communication skills
- Either (1) U.S. citizenship or (2) Green Card with at least 3 years of U.S. residency

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 - Please upload a copy of a transcript for your current or most recent degree program that meets the disciplinary qualifications of the opportunity. Click here for detailed information about acceptable transcripts.
- One recommendation. Your application will be considered incomplete and will not be reviewed until one recommendation is submitted. 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.

If you have questions, send an email to AIRFORCE@orise.orau.gov. Please list the reference code of this opportunity [AFIT-2024-0005] 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:** LPR or U.S. Citizen
- **Degree:** Currently pursuing an Associate's Degree, Bachelor's Degree, Master's Degree, or Doctoral Degree.
- **Overall GPA:** 3.00
- **Academic Level(s):** Graduate Students or Undergraduate Students.
- **Discipline(s):**
  - **Computer, Information, and Data Sciences** (17 👁)
  - **Engineering** (27 👁)
  - **Mathematics and Statistics** (3 👁)
- **Age:** Must be 18 years of age

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