Opportunity Title: Remote Sensing, Modeling and Simulation (M&S), and Software and Algorithm Development
Opportunity Reference Code: AFIT-2020-0020

Organization U.S. Department of Defense (DOD)

Reference Code AFIT-2020-0020

How to Apply Components of the online application are as follows:

- Profile Information
- Educational and Employment History
- Essay Questions (goals, experiences, and skills relevant to the opportunity)
- Resume (PDF)
- Transcripts/Academic Records - For this opportunity, an unofficial 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.
- 1 Recommendation(s)

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.

If you have questions, send an email to **AIRFORCE@orise.orau.gov**. Please list the reference code of this opportunity in the subject line of the email.

All documents must be in English or include an official English translation.

Letter of Recommendation: While a letter of recommendation is not required to be considered, applicants are required to provide contact information for one recommendation in order to submit the application. Applicants are encouraged to request a letter of recommendation before submission as this may help reviewers have a better understanding of the applicant's qualifications and interests. If selected, a letter recommendation must be submitted on your behalf upon acceptance of the appointment.

Description The Air Force Institute of Technology (AFIT) is located on Wright-Patterson Air Force Base, Ohio. Fundamental to the its mission, the AFIT Graduate School executes STEM-related research and development in a number of disciplines including aeronautics & astronautics, engineering physics, computer & electrical engineering, mathematics & statistics, operations research, and systems engineering. Graduate school faculty conduct sponsored research in these disciplines in support of numerous Air Force, DoD and US federal organizations. For more information, visit us at https://www.afit.edu/ENR.

Under the guidance of a mentor, participants will gain experience in

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radiometric modeling and simulation (M&S) of scenes (such as view of earth from space or aerial platforms), target signatures (such as missile plumes or aircraft heat signatures), and sensors (such as high definition visible or infrared imagers). Participants may also contribute to research in one of several technical areas including software development for model visualization or performance optimization, algorithm development for exploitation of remotely sensed data (such as detection of dim signals, automated target recognition, or pattern of life trending), and data collection via laboratory and field experimentation. Participants will hone their technical programming skills by helping AFIT researchers develop software, algorithms and simulations that support a variety of Department of Defense (DOD) and Intelligence Community (IC) sponsors.

Appointment Length

An ORISE appointment period can be a short-term (less than 2 weeks), summer (10-12 weeks), or yearlong appointment. Faculty appointments are generally for 10-12 weeks during the summer, but appointments during the academic year are also available. Appointments may be extended depending on funding availability, project assignment, program rules, and availability of the participant.

Participant Benefits

Participants will receive a stipend to be determined by **AFIT.** Stipends are typically based on the 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

Nature of Appointment

The participant will not enter into an employee/employer relationship with ORISE, ORAU, DOD, or any other office or agency. Instead, the participant will be affiliated with ORISE for the administration of the appointment through the ORISE appointment letter and Terms of Appointment.

Qualifications

Participants should be current undergraduate or graduate students pursuing degrees in a physical science, an engineering discipline, or software or computer engineering. Participants should have experience coding in MATLAB, C++, and/or Python. A strong GPA, coursework in optics and image or signal processing, experience working in technical project teams, and an interest in technology development are highly desired.

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Currently pursuing a Bachelor's Degree or Master's Degree.

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- **Discipline(s):**
  - **Chemistry and Materials Sciences** (12 👁)
  - **Communications and Graphics Design** (2 👁)
  - **Computer, Information, and Data Sciences** (16 👁)
  - **Earth and Geosciences** (21 👁)
  - **Engineering** (27 👁)
  - **Environmental and Marine Sciences** (14 👁)
  - **Life Health and Medical Sciences** (45 👁)
  - **Mathematics and Statistics** (10 👁)
  - **Other Non-Science & Engineering** (2 👁)
  - **Physics** (16 👁)
  - **Science & Engineering-related** (1 👁)
  - **Social and Behavioral Sciences** (27 👁)