

**Opportunity Title:** Air Force Research Laboratory (AFRL) - Robust and Secure Machine Learning

**Opportunity Reference Code:** AFRL-711HPW-2021-0016

**Organization** U.S. Department of Defense (DOD)

**Reference Code** AFRL-711HPW-2021-0016

**How to Apply** Click on *Apply* at the bottom of the opportunity to start your application.

**Description** The U.S. Air Force Research Laboratory (AFRL) is offering a bachelor's level internship.

#### What will I be doing?

As an ORISE participant, you will join a community of scientists and researchers in an effort to enhance your understanding of machine learning. Robust and Secure Machine Learning aims to investigate the mechanisms for robustness in machine learning models in order to provide evaluations for robustness and improve the adversarial robustness of machine learning systems.

#### 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:

- Learning to develop and implement algorithm performance assessment metrics by contributing to a multi-language (Java, Python) machine learning evaluation library.
- Developing skills in Machine Learning (ML), specifically in adversarial ML and computer vision.
- Honing programming skills by reading an existing mature codebase and adapting relevant features to a new codebase.
- Contributing to communication materials and publications about the Robust and Secure Machine Learning research program.
- Experience coordinating with other software developers working towards building extensible and maintainable software.

#### What is the anticipated start date?

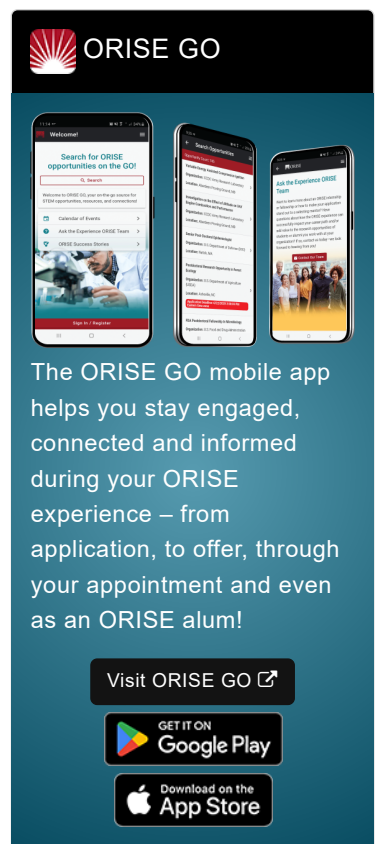
AFRL is ready to make appointments immediately. Exact start dates will be determined at the time of selection and in coordination with the selected candidate. Applications are reviewed on an ongoing basis and internships will be filled as qualified candidates are identified.

#### What is the appointment length?

This appointment is a ten-week research appointment, with the possibility to be renewed for additional research periods. 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 AFRL. Stipends are typically




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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 AFRL

The Air Force Research Lab 711th Human Performance Wing (711 HPW) is a unique combination of three units: the Airman Systems Directorate (RH), the US Air Force School of Aerospace Medicine (USAFSAM) and the Human Systems Integration Directorate (HP). The synergies of combining the ideas, resources and technologies of these units position the 711 HPW as a world leader in the study and advancement of human performance. For more information about the 711th HPW, please visit the following site: <https://www.wpafb.af.mil/afrl/711hpw/>. The research activities in this opportunity will be conducted on Wright-Patterson Air Force Base.

#### 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 should currently be pursuing, or expect to have received a bachelor's degree in computer science, computer engineering, mathematics, or related discipline by May 31, 2022. Degree must have been received within four years of the appointment start date.

Highly competitive applicants will have education and/or experience in one or more of the following:

- Coursework or experience in software engineering and data structures and algorithms.
- Coursework or experience in programming in Java and Python.
- Experience in reading existing codebases and source-to-source translation.
- Experience or knowledge in developing extensible and maintainable codebases and best practices when developing software libraries from scratch.

#### Application Requirements

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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 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.](#)
- One Recommendation

If you have questions, send an email to [AIRFORCE@orise.orau.gov](mailto:AIRFORCE@orise.orau.gov). Please list the reference code of this opportunity [AFRL-711HPW-2021-0016] in the subject line of the email.

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- Eligibility Requirements**

- **Citizenship:** U.S. Citizen Only
  - **Degree:** Bachelor's Degree received within the last 48 months or anticipated to be received by 5/31/2022 12:00:00 AM.
  - **Discipline(s):**
    - **Computer, Information, and Data Sciences** ([17](#) )
    - **Social and Behavioral Sciences** ([1](#) )