Opportunity Title: AFRL Cognitive Neuroscience Research ML/AI Data Science Internship

Opportunity Reference Code: AFRL-711HPW-2024-0019

Organization	U.S. Department of Defense (DOD)
Reference Code	AFRL-711HPW-2024-0019
How to Apply	Click on *Apply* at the bottom of the opportunity to start your application.
Application Deadline	3/31/2025 3:00:00 PM Eastern Time Zone
Description	The Air Force Research Laboratory is offering a Cognitive Neuroscience Research ML/AI Data Science Internship in the Human Performance Research Wing.

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 execute studies conducted locally at Wright-Patt Air Force Base (WPAFB) and remotely at continental United States Department of Defense (CONUS DoD) component garrisons. You will gain experience in the design and implementation of high-risk / high-reward data analytics to deliver insights about human performance data for operational needs, and in preparing analytic insights for publication in formal academic venues.

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:
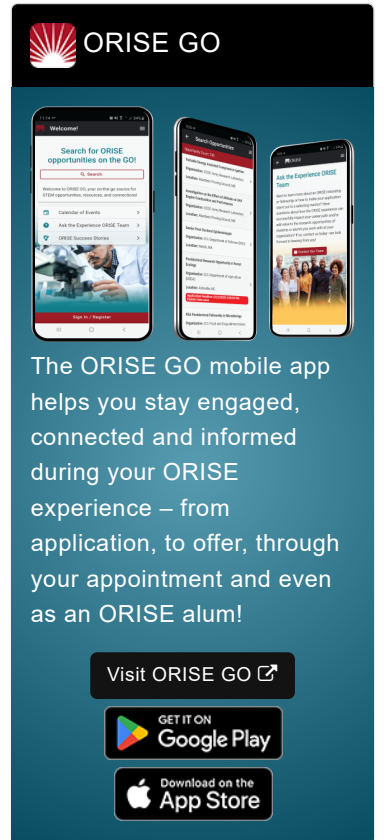
- State-of-the-art methods and predictive modeling approaches and ML/AI to complex, high-risk questions in human performance data
- Predictive statistical learning models to analyze questions from psychometric, neuroscientific, and human performance data
- Analytics approaches could include methods such as Case-Based Reasoning, CNNs, RFs, Topological Data Analysis, LASSO, Time Series Analysis, SVM, BRANN, Bayesian Neural Networks
- Data preprocessing pipelines and developing standard laboratory practices around missingness, interpolation, noise reduction, dimensionality reduction, feature engineering, etc. for psychometric, human performance, time series, or machine vision datasets
- Design of appropriate statistical analysis plans, IRB protocols, and research designs, including familiarity with one or more methodologies for feature selection and interpretation (e.g., LIME, Ridge Regression, SHAP, iRF , EBM, DeepLIFT…)
- Document analytics pipelines and statistical results, including detailed internal reports for research sponsors and government partners
- Journal articles, conference presentations, git repos, and other public documentation of scientific results and findings

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.

Opportunity Title: AFRL Cognitive Neuroscience Research ML/AI Data Science
Internship
Opportunity Reference Code: AFRL-711HPW-2024-0019

What is the appointment length?

This appointment is a twelve-month 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 appointment provisions?

You will receive a stipend to be determined by AFRL. Stipends are typically based on a participant's academic standing, discipline, experience, and research facility location. Other provisions 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 711th Human Performance Wing (711 HPW), headquartered at Wright-Patterson Air Force Base in Ohio, is the first human-centric warfare wing to consolidate human performance research, education, and consultation under a single organization. Established under the Air Force Research Laboratory (AFRL), the 711 HPW is comprised of the Airman Systems Directorate (RH) and the United States Air Force School of Aerospace Medicine (USAFSAM). For more information about the Air Force Research Laboratory, 711 Human Performance Wing, Airman Systems Directorate, Airman Biosciences Division, please visit https://afresearchlab.com/.

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](#).

The 711th Human Performance Wing (711 HPW), headquartered at Wright-Patterson Air Force Base in Ohio, is the first human-centric warfare wing to consolidate human performance research, education, and consultation under a single organization. Established under the Air Force Research Laboratory (AFRL), the 711 HPW is comprised of the Airman Systems Directorate (RH) and the United States Air Force School of Aerospace Medicine (USAFSAM). For more information about the Air Force Research Laboratory, 711 Human Performance Wing, Airman Systems Directorate, Airman Biosciences Division, please visit https://afresearchlab.com/.

The 711th Human Performance Wing (711 HPW), headquartered at Wright-Patterson Air Force Base in Ohio, is the first human-centric warfare wing to consolidate human performance research, education, and consultation under a single organization. Established under the Air Force Research Laboratory (AFRL), the 711 HPW is comprised of the Airman Systems Directorate (RH) and the United States Air Force School of Aerospace Medicine (USAFSAM). For more information about

Opportunity Title: AFRL Cognitive Neuroscience Research ML/AI Data Science Internship

Opportunity Reference Code: AFRL-711HPW-2024-0019

the Air Force Research Laboratory, 711 Human Performance Wing, Airman Systems Directorate, Airman Biosciences Division, please visit https://afresearchlab.com/.

Qualifications
The qualified candidate will be currently pursuing or have received a BS/MS/PhD in a STEM related area within three years of the appointment start date. If currently pursuing, anticipated graduation date is 06/30/2025.

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

- Predictive modeling approaches
- ML/AI
- Methodologies for feature selection and interpretation (e.g., LIME, Ridge Regression, SHAP, iRF , EBM, DeepLIFT…)
- Technical writing/contributions

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. 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 AFRL-711HPW-2024-0019 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!

Point of Contact   Alecia

Eligibility Requirements
- **Citizenship:** U.S. Citizen Only
- **Degree:** Bachelor's Degree, Master's Degree, or Doctoral Degree received within the last 36 months or anticipated to be received by

Opportunity Title: AFRL Cognitive Neuroscience Research ML/AI Data Science Internship
Opportunity Reference Code: AFRL-711HPW-2024-0019

6/30/2025 12:00:00 AM.

- **Discipline(s):**
  - **Computer, Information, and Data Sciences** (17 👁)
  - **Engineering** (27 👁)
  - **Life Health and Medical Sciences** (51 👁)
  - **Social and Behavioral Sciences** (7 👁)