

Opportunity Title: Resilient RF Machine Learning for Dynamic and Novel Emitter Environments

Opportunity Reference Code: ARL-R-ESS-400066-F1

Organization DEVCOM Army Research Laboratory

Reference Code ARL-R-ESS-400066-F1

How to Apply Applications must be submitted in [Zintellect](#).

A complete application includes:

1. Curriculum Vitae or Resume

- List relevant coursework and lab experience as well as all papers, presentations, or publications you may have authored or co-authored. Include any reprints or abstracts if they are available.

2. Three References Forms

- An email with a link to the reference form will be available in Zintellect to the applicant upon completion of the on-line application. Please send this email to persons you have selected to complete a reference.
- References should be from persons familiar with your educational and professional qualifications (include your thesis or dissertation advisor, if applicable)

3. Transcripts

- Transcript verifying receipt of degree or current enrollment in an undergraduate or graduate program at an accredited university or technical institute. Student/unofficial copy is acceptable

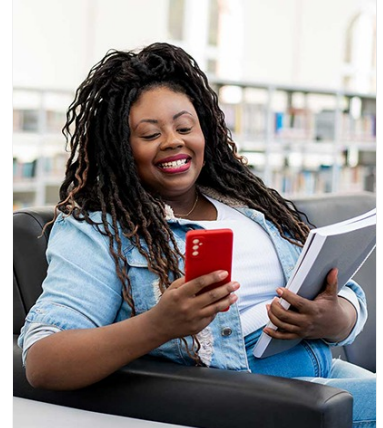
4. Research Proposal

- Research topic should relate to a specific opportunity at ARL
- The objective of the research topic should be clear and have a defined outcome
- Explain the direction you plan to pursue
- Include expected period for completing the study
- Include a brief background such as preparation and motivation for the research
- References of published efforts may be used to improve the proposal

Description The Army Research Laboratory (ARL) in San Antonio is seeking a U.S. citizen interested in developing artificial intelligence (AI) and machine learning (ML) for radio frequency (RF) sensing. The ideal candidate will be part of the team that develops new paradigms and technical approaches based on AI/ML that enable learning, adapting, and performing automated detection, classification, modulation recognition, and application intent of complex RF emitters in Multi Domain Operations (MDO) environments.

The candidate will conduct research that seeks to improve the AI/ML solutions for RF applications. Duties include the following:

- Real-world data driven development of customized, lightweight, scalable algorithms AI/ML for RF applications.
- Internship will primarily involve algorithm development but may include participation in data collections and field tests.



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- Publish a paper in a peer-reviewed journal.

Advisors:

ARL Advisor: Dr. D. Marius Necsoiu

ARL Advisor Email: dorel.m.necsoiu.civ@army.mil

About ARD

ARL's Army Research Directorate (ARD) focuses on exploiting concept development, discovery, technology development, and transition of the most promising disruptive science and technology to deliver to the Army fundamentally advantageous science-based capabilities through laboratory's 11 research competencies. This intramural research directorate also manages the laboratory's essential research programs, which are flagship research efforts focused on delivering defined outcomes.

About ARL-RAP

The [Army Research Laboratory Research Associateship Program](#) (ARL-RAP) is designed to significantly increase the involvement of creative and highly trained scientists and engineers from academia and industry in scientific and technical areas of interest and relevance to the Army. Scientists and Engineers at the CCDC Army Research Laboratory (ARL) help shape and execute the Army's program for meeting the challenge of developing technologies that will support Army forces in meeting future operational needs by pursuing scientific research and technological developments in diverse fields such as: applied mathematics, atmospheric characterization, simulation and human modeling, digital/optical signal processing, nanotechnology, material science and technology, multifunctional technology, combustion processes, propulsion and flight physics, communication and networking, and computational and information sciences.

About Electromagnetic Spectrum Sciences (ESS)

Novel approaches to sensing and operating across the entire electromagnetic (EM) environment; counter-sensing across the EM spectrum; protection from EM effects; emerging concepts for RF, radars, and electronic warfare (EW).

Questions about this opportunity? Please email ARLFellowship@orau.org.

- Qualifications**
- Experience in software programming (LabView, MATLAB, Python)
 - Familiarity with foundational models and self-supervised learning
 - Experience in real-world deployment and evaluation of AI systems
 - Expertise in working with large streaming datasets
 - Understanding of computer system design and decentralized systems
 - Hands-on experience with embedded edge devices, including the deployment of AI algorithms to edge device

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Point of Contact [ARL-RAP](#)

- Eligibility**

Requirements
- **Citizenship:** U.S. Citizen Only
 - **Degree:** Doctoral Degree.
 - **Academic Level(s):** Bachelor's Degree (Journeyman Fellow), Master's Degree (Journeyman Fellow), Master's Degree 7+ years (Senior Fellow), Doctoral Degree (Postdoctoral Fellow), or Doctoral Degree 5+ years (Senior Fellow).
 - **Discipline(s):**
 - **Computer, Information, and Data Sciences** ([17](#) 👁)
 - **Engineering** ([27](#) 👁)
 - **Mathematics and Statistics** ([11](#) 👁)
 - **Physics** ([16](#) 👁)
 - **Science & Engineering-related** ([2](#) 👁)