Opportunity Title: 2025 DEVCOM ARL Summer Student Experience: Electromagnetic Field and Antenna Array Optimization for Distributed Radar and RF Technologies
Opportunity Reference Code: ARL-SSE-2025-EMSS-0016

Organization DEVCOM Army Research Laboratory

Reference Code ARL-SSE-2025-EMSS-0016

How to Apply **Application Deadline: January 12, 2025**

Applications must be submitted in Zintellect.

A complete application includes:

1. **Resume** listing your 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. **Transcripts** verifying current enrollment in an undergraduate or graduate program at an accredited university or technical institute. Original student copies are acceptable.
3. **Statement of Interest** describing your scientific research experience including lab experience and relevant academic coursework. State how this experience intersects with your personal and professional goals.
4. **Three References** formal reference forms are not required for the Summer Student Experience, but names and contact information for references must be provided. During the review process, ARL Selecting Officials may contact references.

Application Deadline 1/12/2025 11:55:55 PM Eastern Time Zone

Description **Research Project**
DEVCOM ARL is seeking a qualified individual for a summer student appointment in the areas of antennas, antenna arrays and active electromagnetic field manipulation, for radar and general RF applications. This position requires a background in complex optimization problems, as well as advanced knowledge of electromagnetic field theory, with emphasis on antenna radiation, as well as beamforming and imaging using antenna arrays. The candidate will collaborate with ARL researchers on problems of current interest to the Army in radar and RF technologies, involving sparse, multi-static arrays implemented as distributed RF systems on unmanned aerial vehicle (UAV) platforms. The position will involve algorithm development for fast solution of optimization problems, using the Matlab and/or Python languages. The algorithms will be tested on computer models, with a well-defined path to future practical applications. Students with an applied mathematics background, are preferred for this position.

Advisor Name: Traian Dogaru
Advisor Email: traian.v.dogaru.civ@army.mil

About Electromagnetic Spectrum Sciences (EMSS)
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).

About the ARL-RAP Summer Student Experience (SSE)
The DEVCOM Army Research Laboratory (ARL) Research Associateship

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Program (RAP) Summer Student Experience (SSE) is an educational program that allows undergraduate through PhD students and recent bachelor's and master's degree graduates to participate in a paid research experience at a Department of Defense laboratory over the summer break. Participants are paired with scientists and engineers at ARL who are helping to shape and execute the Army's program for meeting the challenge of developing technologies that will support Army forces future operational needs. As a participant in the ARL-RAP SSE, you will be part of high priority research efforts that are broadly supported by 11 research competencies. While ARL has identified several specific research topics, the opportunity for general research may also exist under each competency.

About DEVCOM Army Research Laboratory (ARL) Research Associateship Program (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 DEVCOM 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 Army Research Directorate (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 ARL'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.

Location(s) of Appointment
- Adelphi Laboratory Center, Maryland (ALC)

Tentative Summer Program Dates: May 12, 2025 - September 26, 2025. If selected, you will coordinate your exact participation dates with your Research Advisor.
For questions about the Summer Student Experience Program, please email ARLFellowship@orau.org.

Qualifications

Preferred Technical Skills
Pptimization use of MATLAB, Python languages

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Eligibility Requirements

- **Citizenship:** LPR or U.S. Citizen
- **Degree:** Master's Degree or Doctoral Degree received within the last 12 months or currently pursuing.
- **Overall GPA:** 2.50
- **Academic Level(s):** Master’s Degree (Journeyman Fellow) or Doctoral Degree (Postdoctoral Fellow).
- **Discipline(s):**
  - **Mathematics and Statistics** (1 👁)
- **Age:** Must be 18 years old by 5/1/2025