Opportunity Title: Design Obfuscation for Trusted Chip Fabrication
Opportunity Reference Code: ARL-R-PEQS-400043-F1

Organization DEVCOM Army Research Laboratory

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Description **Description**

About the Research

This research position focuses on developing a hardware security design methodology that will be used to obfuscate CMOS IC designs fabricated at untrusted foundries. To achieve the objective of this research program, we seek a motivated, competent and skillful candidate. The candidate is expected to have an in-depth knowledge of ASIC design flow, and scripting languages such as TCL and Python. A potential candidate must also have experience with EDA tools for simulation, synthesis, place and route, custom layout and signoff works. Prior research experience in the area of hardware security is preferable.

Keywords: design automation tool, split-fabrication, design flow, partitioner

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About ARD

The Army Research Directorate (ARD) is the Army's principal internal organization for performing basic research and development in the exploration of science across 11 distinct competencies, including: Biological and Biotechnological Sciences, Electromagnetic Spectrum Sciences, Energy Sciences, Humans in Complex Systems, Mechanical Sciences, Military Information Sciences, Network Cyber and Computational Sciences, Photonics, Electronics, and Quantum Sciences, Sciences of Extreme Materials, Science of Intelligent Systems, Terminal Effects, and Weapon Sciences. In addition, ARD is responsible for improving the technology base of the US Army as well as providing in-house scientific expertise across the full spectrum of science and engineering disciplines. Research is conducted in related aspects of mathematics, physics, chemistry, biology, material science, computer science, and all engineering disciplines.

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 DEVCOM Army Research Laboratory (ARL) help shape and execute the Army's program for meeting the challenge of

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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.

A complete application includes:

- **Curriculum Vitae or Resume**
- **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)
- **Transcripts**
  - Transcript verifying receipt of degree must be submitted with the application. A student/unofficial copy is acceptable.

If selected by an advisor, the participant will also be required to write a **research proposal** to submit to the ARL-RAP review panel. The research proposal should have the following characteristics:

- A clear, achievable objective and a well-defined outcome
- A clear, logical and sound approach to achieve the objective
- An expected period for completing the study
- A brief background such as preparation and motivation for the research
- References of published efforts supporting the proposed work

A link to upload the proposal will be provided to the applicant once the advisor has made their selection.

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

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree.
- **Academic Level(s):** Doctoral Degree (Postdoctoral Fellow).

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- **Discipline(s):**
  - **Computer, Information, and Data Sciences** (17 👁)
  - **Engineering** (27 👁)