ERION PLAKU

eplaku@nsf.gov erionplaku.github.io U.S.A

Driving impactful AI initiatives at the national level

EMPLOYMENT

U.S. National Science Foundation

Acting Senior Advisor for Artificial Intelligence *07/2025–present*
Directorate for Computer and Information Science and Engineering (CISE)

***Program Director (Federal)**, CISE/Information and Intelligent Systems* *12/2023–present*
***Program Director (IPA)**, CISE/Information and Intelligent Systems* *08/2019–08/2022*

George Mason University

***Associate Professor**, Department of Computer Science* *08/2020–12/2023*

Catholic University of America

***Associate Professor**, Department of Electrical Engineering and Computer Science* *08/2016–08/2020*
***Assistant Professor**, Department of Electrical Engineering and Computer Science* *08/2010–08/2016*

Johns Hopkins University

***Adjunct Assistant Professor**, Department of Computer Science* *08/2010–07/2012*

EDUCATION

Johns Hopkins University *Postdoctoral Researcher in Computer Science* *08/2008–08/2010*

Rice University *Ph.D. in Computer Science* *08/2002–07/2008*

Clarkson University *M.S. in Computer Science* *08/2000–05/2002*

SUNY Fredonia *B.S. in Computer Science* *08/1996–05/2000*

LEADERSHIP AND PROGRAM MANAGEMENT

NSF CISE Acting Senior Advisor for Artificial Intelligence *07/2025–present*

Serves as the senior expert and strategic advisor on AI within the CISE Directorate, guiding research directions, policy development, and cross-directorate and cross-agency AI initiatives

NSF AI Steering Committee (Co-Chair) *07/2025–present*

Co-chairs the NSF AI Steering Committee, providing strategic leadership and coordination across NSF directorates to shape national AI research priorities and initiatives

NSF National AI Research Institutes Program (Co-Lead) *12/2023–present*

*Co-leads NSF's flagship AI program, managing a **$640M** investment in 29 AI Institutes to accelerate high-impact research and applications across sectors via collaboration with academia, government, and industry*

NITRD AI R&D Interagency Working Group (Co-Chair) *07/2025–present*

Leads interagency coordination of federal AI R&D efforts across 32 agencies, driving strategic initiatives to strengthen U.S. leadership in AI

NSF Robust Intelligence (Program Director) *08/2019–08/2022, 12/2023–present*

Manages core research program driving advancements in AI, machine learning, computer vision, human language technologies, and computational neuroscience

NITRD Intelligent Robotics and Autonomous Systems IWG (Co-Chair) *07/2021–08/2022*

Led interagency coordination of R&D across 28 federal agencies, accelerating innovation in resilient and efficient robotics and autonomous systems

Foundational Research in Robotics (Co-Lead) *02/2020-08/2022*
National Robotics Initiative (Co-Lead) *08/2019-05/2022*

Led NSF's flagship robotics initiatives, supporting groundbreaking research to advance next-generation robotics and autonomous systems

International AI Partnerships *07/2021–08/2022*

Advanced international partnerships in AI between NSF and Japan's Science and Technology Agency and UK's Engineering and Physical Sciences Research Council

Strategic Leadership & Team Alignment

Proven ability to inspire, lead, and align cross-functional teams toward a unified vision, driving successful outcomes through clear goal-setting, collaborative execution, and fostering a culture of innovation

Executive Communication & Stakeholder Engagement

Proven ability to convey complex technical concepts to a broad spectrum of stakeholders, from technical experts to executive leadership, ensuring clear understanding and alignment for informed decision-making

SELECTED AWARDS

NSF Special Acts Award *2025*

NSF Director's Award for Superior Accomplishments *2021*

Finalist – Best Application Paper *2021*

McMahon J and ***Plaku E****:* "Dynamic Multi-Goal Motion Planning with Range Constraints for Autonomous Underwater Vehicles Following Surface Vehicles." *IEEE International Conference on Automation Science and Engineering pp. 704–711*

Best Robotics Paper *2017*

Le D and ***Plaku E****:* "Cooperative Multi-Robot Sampling-Based Motion Planning with Dynamics." *International Conference on Planning and Scheduling pp. 513–521*

Best Student Paper *2015*

Wells A and ***Plaku E****:* "Adaptive Sampling-Based Motion Planning for Mobile Robots with Differential Constraints." *Springer LNCS: Towards Autonomous Robotic Systems vol. 9287, pp. 283–295*

Kaman Excellence in Research Award *School of Engineering, Catholic University of America* *2015*

Faculty Research Fellowship *Office of Naval Research, U.S. Naval Research Laboratory* *2014*

Burns Fellowship *School of Engineering, Catholic University of America* *2011*

RESEARCH AND TECHNICAL ACCOMPLISHMENTS

Robotics & Autonomous Systems

Motion Planning & Control: *Led innovations in AI-integrated motion planning deployed across robotic domains to enable fast, efficient, and adaptive autonomy*

Task-Oriented Autonomy: *Advanced task and motion planning methods that empower robots to autonomously execute high-level missions with minimal supervision*

Multi-Robot Coordination: *Developed scalable coordination strategies for autonomous teams, enabling collaborative decision-making in dynamic, real-world settings*

Natural Language Integration: *Leveraged large language models to enable robots to understand and act on human intent expressed in natural language*

AI & Machine Learning

AI-Driven Decision-Making: *Designed scalable decision systems combining search, planning, and reasoning to optimize complex, high-impact operations*

Generative AI & LLMs: *Integrated large language models to enhance knowledge access, automate reasoning, and strengthen human-AI collaboration*

Deep Learning & Reinforcement Learning: *Applied deep and reinforcement learning to enable real-time adaptation and performance optimization in dynamic environments*

Uncertainty & Probabilistic Modeling: *Advanced AI robustness through probabilistic reasoning and Bayesian inference for reliable decision-making under uncertainty*

AI Scalability: *Scaled complex AI solutions using distributed computing frameworks to support large-scale planning, search, and learning*

Industry Applications & Cross-Domain Impact

Defense: *Delivered AI-powered autonomy across air, land, sea, and undersea platforms, enhancing mission success, resilience, and operational efficiency*

Healthcare & Medical Systems: *Applied AI in robotic-assisted surgery to improve precision, training efficacy, and patient safety in high-stakes clinical environments*

Manufacturing & Logistics: *Enabled intelligent mobility and coordination in warehouse automation, driving cost reduction, scalability, and supply chain optimization*

Publications

95+ papers in AI and robotics conferences and journals, full list: erionplaku.github.io/Publications.html

Teaching

Taught undergraduate and graduate courses in AI, ML, Robotics, Data Mining, and Algorithms during academic tenure

INTERESTS

Chess *1982–present*

Former professional chess player with national and international competition experience; currently a recreational player with a Chess.com Blitz rating of 2475

Soccer *1981–present*

Longtime soccer player with active participation in organized recreational leagues