

NATIONAL SCIENCE FOUNDATION

Proposal Abstract

Proposal:1937888

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Proposal Title: Convergence Accelerator Phase 1 (RAISE): Fostering a Diverse AI Workforce

Institution: Columbia University

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The NSF Convergence Accelerator supports team-based, multidisciplinary efforts that address challenges of national importance and show potential for deliverables in the near future.

The broader impact/potential benefit of this Convergence Accelerator Phase I project is to uncover key factors in engaging underrepresented high school students in Artificial Intelligence (AI) topics that lead to long-term pursuit of careers with an ultimate goal of increasing diversity in AI and better meeting the growing workforce demands. This project will employ an "AI First" model that emphasizes the concept of code that produces itself from data - a departure from traditional CS education that emphasizes coding alone. Such a paradigm shift requires a multi-disciplinary approach. This proposal brings together experts in the field of Social Work, Computer Science, and STEM education outreach and leverages existing relationships between multiple universities and a nonprofit education organization. Through research studies that will uncover best practices in engaging students with AI and through complementary outreach efforts that will serve as test beds for research findings, this proposal will set the foundation for how to build a pipeline at the K-12 level to lead to a diverse and competitive AI workforce. The end goal is that this diverse workforce will create new products using AI with less potential for bias.

This Convergence Accelerator Phase I project aims to address the lack of qualified and diverse candidate pool for the AI workforce sector. It also addresses the growing concern that lack of representation among the AI workforce is resulting in creation of technology that is more likely to exacerbate societal biases, including sexism and racism. The convergent research approach employed here involves: 1) refining primary research questions regarding K-12 engagement with AI curriculum and develop accompanying assessment tools to evaluate AI outreach programs; 2) identifying best practices in social work research to create a robust recruitment model that intentionally targets underrepresented groups in AI to education outreach opportunities; and 3) utilizing a social work framework to develop a model for a pilot internship program that connects students to employers and brings them further along in the pipeline to a career in AI. This research will result in the development of a Toolkit that will be used widely by K-12 practitioners to engage more students and thereby create and even stronger pipeline of talent to enter the AI workforce in the future.

This award reflects NSF's statutory mission and has been deemed worthy of support through evaluation using the Foundation's intellectual merit and broader impacts review criteria.