

IS 709/809: Computational Methods in IS Research

Research Reflection

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NSF CPS Frontier Awards 2016

- NSF awards \$13 million toward research in cyber-physical systems
 - Research to focus on mitigating noise pollution
 - improving manufacturing systems
 - autonomous vehicles
- The three new NSF-funded projects will develop technologies to:
 - Monitor and mitigate noise pollution in cities.
 - Quickly identify and overcome problems in manufacturing environments.
 - Improve the capabilities of autonomous vehicles.
 - https://www.nsf.gov/news/news_summ.jsp?cntn_id=189476

NSF CPS Frontier Awards 2016

- The 2016 CPS Frontier awards include:
 - [SONYC: A Cyber-Physical System for Monitoring, Analysis and Mitigation of Urban Noise Pollution](#)
 - The \$4.6 million, five-year Sounds of New York City (SONYC) project takes aim at New Yorkers' biggest civic complaint -- noise.
 - A team of scientists from New York University (NYU) will launch a first-of-its-kind comprehensive research effort to understand and address noise pollution in New York City and other urban areas
 - The project, which involves large-scale noise monitoring, leverages the latest in machine learning, big data analysis, and public participation in scientific research to more effectively monitor, analyze and mitigate urban noise pollution.
 - The project has the support of New York City's health and environmental agencies.

NSF CPS Frontier Awards 2016

- **VeHICaL: Verified Human Interfaces, Control, and Learning for Semi-Autonomous Systems**
 - NSF has awarded \$4.6 million to a team exploring human cyber-physical systems (h-CPS)
 - systems that operate in concert with human operators
 - improving the interaction between humans, computers and the physical world.
 - The research outcome of the project will have applications in emerging technologies such as semi-autonomous cars and autonomous aerial vehicles (drones).

CPS Frontier Awards 2016

- **Software-Defined Control for Smart Manufacturing Systems**
 - This \$4 million, NSF-supported project aims to enhance the security and operations of manufacturing systems
 - a new method called "Software Defined Control."
 - By making a computer model of a physical system, operators can better detect and address anomalies in the system, and adapt quickly to manufacturing changes with minimal disruption to operations or production.

NIFA/NSF CPS projects

- USDA announces \$5 million in funds for smart technology innovations in agriculture
 - https://www.eurekalert.org/pub_releases/2016-12/niof-ua121616.php

NSF CPS Awards 2017

- NSF CPS project search
 - <https://www.nsf.gov/awardsearch/simpleSearch.jsp>
 - Keywords: CPS

NSF CPS Awards 2017

- **CPS: Medium: Safety-Critical Wireless Mobile Systems**

Award Number:1739333; Principal Investigator:
Cameron (Kamin) Whitehouse; Co-Principal
Investigator: Lu Feng, Cody Fleming; Organization:
University of Virginia Main Campus; NSF Organization:
CNS Start Date:09/01/2017; Award
Amount:\$800,000.00

NSF CPS Awards 2018

- NSF CPS project search
 - <https://www.nsf.gov/awardsearch/simpleSearch.jsp>
 - Keywords: CPS

NSF Future of Work 2018 Awards

- FW-HTF: Collaborative Research: The Next Mobile Office: Safe and Productive Work in Automated Vehicles
- Collaborative Research: FW-HTF: Augmented Cognition for Teaching: Transforming Teacher Work with Intelligent Cognitive Assistants

NSF Future of Work 2018 Awards

- FW-HTF: First Person View and Augmented Reality for Airborne Embodied Intelligent Cognitive Assistants
- FW-HTF: Collaborative Research: An Embodied Intelligent Cognitive Assistant to Enhance Cognitive Performance of Shift Workers
- Collaborative Research: FW-HTF: Integrating Cognitive Science and Intelligent Systems to Enhance Geoscience Practice

NSF Future of Work 2018 Awards

- FW-HTF: Future of Firefighting and Career Training - Advancing Cognitive, Communication, and Decision Making Capabilities of Firefighters
- FW-HTF: The future of classroom work: Automated Teaching Assistants
- FW-HTF: Collaborative Research: Pre-Skilling Workers, Understanding Labor Force Implications and Designing Future Factory Human-Robot Workflows Using a Physical Simulation Platform

Questions

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