

**C3.ai Digital  
Transformation  
Institute**

# **Third Call for Proposals**

**General Information Session #2**

**January 19, 2022**

# C3.ai Digital Transformation Institute

**C3.ai DTI's mission is to attract the world's leading scientists to join in a coordinated and innovative effort to advance the digital transformation of business, government, and society.**

# Partner organizations

Carnegie  
Mellon  
University



Massachusetts  
Institute of  
Technology



PRINCETON  
UNIVERSITY

Stanford  
University

Berkeley  
UNIVERSITY OF CALIFORNIA



THE UNIVERSITY OF  
CHICAGO



UNIVERSITY OF  
ILLINOIS  
URBANA-CHAMPAIGN



BERKELEY LAB



National Center for  
Supercomputing Applications

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

# Available Funding for this 3rd CFP

- It is anticipated that up to **USD \$10 million** in Research Awards will be awarded from this Call for Proposals.
- Proposals can request funding of \$100,000 to \$1,000,000 for an initial period of one (1) year.
- In addition to cash awards, funded proposals will include unlimited free access to the C3 AI Suite hosted on the Microsoft Azure Cloud.

# Eligibility

- Proposal PIs must be faculty researchers from C3.ai DTI consortium partner institutions. Co-Investigators may be from C3.ai DTI consortium partner institutions or other institutions.
- Preference will be given to proposals where the majority of work and expenditures occur at C3.ai DTI consortium partner institutions.
- C3.ai DTI strongly encourages the submission of proposals that are interdisciplinary and inter-institutional across C3.ai DTI consortium partner institutions and other institutions around the world.
- **NOTE: By submitting a proposal to this solicitation, proposal PIs and co-Investigators agree to serve as reviewers** for other proposals submitted to this solicitation.

**Third Call for  
Proposals:  
AI to Transform  
Cybersecurity  
and Secure  
Critical  
Infrastructure**

**AI to Transform Cybersecurity and Secure  
Critical Infrastructure**

The pace, volume, and sophistication of attacks against our information infrastructure, networks, and our critical infrastructures are accelerating leading to substantive hacking, disruptions, and penetrations of our government, defense, and private sector information systems and energy, telecommunications, financial, water, and other critical infrastructures.

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Advanced AI/ML techniques present an opportunity to bring new tools and methods to detect, explain, and respond to previously unknown attack vectors, leading to better security of IT systems, OT systems, and critical infrastructures.



**Third Call for  
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AI to Transform  
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**AI to Transform Cybersecurity and Secure  
Critical Infrastructure**

This Third C3.ai DTI Call for Proposals is to solicit proposals for funding primary research to advance the science of AI and digital transformation in cybersecurity, with a focus on hardening information security (Infosec) and securing critical infrastructure.

# Third Call for Proposals: AI to Transform Cybersecurity and Secure Critical Infrastructure

Areas of interest to this call include but are not limited to:

- AI techniques to identify previously unknown malware, ransomware, and zero-day vulnerabilities, enabling isolation and neutralization
- AI-enabled network and system crawlers that can continuously search and identify persistent access mechanisms (backdoors), bots, remote access toolkits (RATS), stagers, and Trojans
- AI forensics and attribution techniques to identify sources of attacks
- AI techniques to automate simulated adversarial attacks to identify system and network vulnerabilities
- AI techniques to accurately identify and enable the neutralization of phishing attacks

# Third Call for Proposals: AI to Transform Cybersecurity and Secure Critical Infrastructure

Areas of interest to this call include but are not limited to:

- Change management techniques to prevent the weaponization of innocent insiders
- AI techniques to detect the presence of advanced persistent threats and insider threats
- AI-enabled network and/or system crawlers that access and continuously evaluate system security levels
- AI techniques, perhaps in supervised or unsupervised learning, to provide early detection of system and/or network anomalies that might be indicative of unauthorized access, denial of service, or data exfiltration

# Third Call for Proposals: AI to Transform Cybersecurity and Secure Critical Infrastructure

Areas of interest to this call include but are not limited to:

- Techniques and methods to enable the development of AI algorithms that are resilient to adversarial attacks
- AI techniques to identify concentration risk in the software and computer supply chain
- Change management to transform organizational behavior to manifest best practices in cyber hygiene
- Techniques to respond to attacks at the organizational and societal level.

# Third CFP: AI to Transform Cybersecurity and Secure Critical Infrastructure

- PI must be from one of the C3.ai DTI institutions
- Projects must use the C3 AI suite
- PIs and co-Investigators agree to serve as reviewers for other proposals submitted to this solicitation.
- You are encouraged to recommend reviewers (within EasyChair)
- Funding total of \$10M, one-year projects, funded proposals \$100K-\$1M, no indirect costs allowed
- Key dates:
  - Submission February 7, 2022 (EasyChair)
  - Decisions: March
  - Funding start: Around June 1, 2022
- No prior experience with C3 AI Suite is required
- DevOps team will be available for consultation and its members can be embedded in research teams at no cost to the PIs.
- Projects that leverage other sources of funding are welcome.

# Review Criteria

- Proposals must plan to use the C3 AI Suite
- Projects will be peer-reviewed on the basis of
  - Scientific Merit
  - Prior Accomplishments of the PI/ co-PIs
  - Use of AI/ML/Data Analytics/Cloud Computing
  - Suitability for Testing Methods at Scale
- No prior experience with C3 AI Suite is required; DevOps team will be available for consultation; DevOps team members can be embedded in research teams at no cost to the PIs.
- Projects that leverage other sources of funding are welcome.

# Submission and Timeline

- All proposals should be submitted online via EasyChair at:  
<https://easychair.org/conferences/?conf=c3dticfp3>
- Use the **Proposal Submission Template** in EasyChair when preparing your proposal. When finished, save your proposal in PDF format and upload all sections to EasyChair as a single PDF.
- Proposals must be submitted to by 11:59 pm PDT February 7, 2022.
- Awards will be announced in March 2022, with start dates of June 1, 2022.
- Questions about general eligibility, proposal preparation, or research awards should be directed to the C3.ai DTI by e-mail at [proposals@c3dti.ai](mailto:proposals@c3dti.ai).

# Information Sessions

- **General Information Session (Online)**

Wednesday, January 12, noon – 1 pm PT / **2 – 3 PM CT** / 3 – 4 pm ET

**Zoom Meeting:** <https://berkeley.zoom.us/j/91292648113>

(This Meeting) Wednesday, January 19, 1 pm – 2 pm PT / **3 – 4 PM CT** / 4 – 5 pm ET

**Zoom Meeting:** <https://berkeley.zoom.us/j/98882926611>

- **Weekly Office Hours (Online)**

the C3.ai DTI Development Operations staff will be available to answer your questions about computing resources on Tuesdays beginning January 11, 2022 until the proposal submission deadline, between **9:00-10:00 AM PT** / **11:00-noon CT** / **12:00-1:00 PM ET**. Please use this Zoom Meeting link:

<https://illinois.zoom.us/j/81346993051?pwd=VnJwVkdBenZOZ0duWGxkOURJTytWdz09>



**For full details on this 3<sup>rd</sup> CFP, see:**

**<https://c3dti.ai/research/ai-for-cybersecurity-and-critical-infrastructure/>**

Questions about general eligibility, proposal preparation, or research awards should be sent to [proposals@c3dti.ai](mailto:proposals@c3dti.ai)

# Third Call for Proposals: Computing Resources

# C3.ai DTI Awardees to Use C3 AI Technologies

- Awardees will be given access to the C3 AI Suite and C3 AI Ex Machina
  - C3 AI is providing private, customizable deployments for awardees
- These platforms' features include:
  - Low- and no-code AI deployments
  - Scalable data and processing from multiple, dynamically-updated data sources
  - Schedule- and event-based processing
  - Jupyter Notebook support (Python and R)
  - Visualization dashboards

# C3.ai DTI Support Available to Awardees

- DTI staff at UC Berkeley & UIUC support your use of C3 AI technology:
  - Consultations
  - Possibility of C3.ai DTI staff member joining select research teams (limited availability)
  - Customized training materials and mentoring
  - Liaison with C3 AI engineers and data scientists
- Assistance with complementary resources
  - HPC at NCSA and NERSC
  - Azure cloud



# Scientific Computing

Berkeley Lab National Energy Research  
Scientific Computing Center (NERSC)

- High performance facility for U.S. Department of Energy, Office of Science
- 75 million hours of computing resources on Cori (NERSC-8) and Perlmutter (NERSC-9) systems



# High Performance Computing

National Center for Supercomputing Applications (NCSA) at University of Illinois Urbana-Champaign





# Microsoft Azure Resources Available

\$2,000,000 per year in Microsoft Azure  
compute capacity

Cloud Infrastructure to support 180 researchers

- Compute
- Storage
- All Azure services



# Questions & Answers