APPLIED RESEARCH LABORATORY FOR
INTELLIGENCE
AND SECURITY

Tentative Project Topics
Research for Intelligence and Security Challenges (RISC)
Summer 2022

01 Assessment of Cyber Counterintelligence (CI) Network Sensor Requirements and Standards

Sponsor: Defense Cyber Counterintelligence Center (DC3)
USG Champion: Jon Stivers, DC3 LNO to I&S
Highest classification level: Deliverables should not be classified above SECRET.

Project Description:

Cyber CI operations by the Military/Defense CI organizations (MDCOs) have led to the development of differing network sensors to support their respective cyber CI missions. Consequently, there is a diversity of capabilities across the sensors currently in use.

Analysis is required to identify current and anticipated cyber CI sensor requirements and to establish standards for the design and development of new sensor capabilities.

The MDCOs can describe current cyber CI sensor requirements and capabilities as well as anticipated future requirements.

Expected Output:

Analysis should result in a report identifying common and disparate requirements identified by the MDCOs as well as their anticipated future requirements. The report should also compare and contrast the capabilities of each MDCO sensor system. Based on the documented requirements and capabilities, the report should provide recommendations to standardize sensor design, development, and operations across the MDCOs. This should include the development of criteria to be used in an independent verification and validation regimen to assess the efficacy of MDCO sensors.

02 Cyber Counterintelligence (CI) Operations in the Defense Industrial Base (DIB) - Assessment of Operational Equity and Risk Considerations

Sponsor: Defense Cyber Counterintelligence Center (DC3)
USG Champion: Jon Stivers, DC3 LNO to I&S
Highest classification level: Deliverables should not be classified above SECRET. Analysis of some MDCO cyber operations on DIB networks may require TS access.

Project Description:

Cyber CI operations on DIB networks often identify adversary activity and even the exfil of critical technology information (CTI) from these networks. This creates an intelligence gain/loss challenge. Cyber CI threat pursuit operations against adversaries must be balanced against the risk of losing CTI to those adversaries.

The Military/Defense CI organizations (MDCOs) can provide information regarding their CI operations on DIB networks, CTI targeted/exfilled by adversaries, and measurable results of these operations.

OUSD(A&S), OUSD(R&E), DoD CIO, and the Joint Staff, can provide information regarding the impact of CTI loss to operations and acquisitions.

Expected Output:

Analysis should result in policy recommendations to establish assessment criteria for intelligence gain/loss decisions on MDCO cyber operations involving the DIB.

Under what circumstances should MDCOs continue allowing and monitoring adversary activity on a DIB network for CI collections or operations? Under what circumstances should MDCOs accept the implementation of defensive measures to prevent loss of CTI? Even if it limits or prevents an adversary's ability to maneuver on the DIB network and restricts CI collections or operations?

- Analysis should identify results of MDCO cyber CI operations
- Analysis should determine at what point during cyber CI operations the identified results were achieved (Consider using MITRE ATT&CK sequence)
- Analysis should assess the impact to cyber CI operational results if adversary activities were limited or prevented before CTI (or additional CTI) was exfilled
- Analysis should describe risk to operations or acquisitions resulting from exfil of CTI from DIB networks monitored by MDCO cyber operations

05 Data Visualization to Compare Critical Technologies to the U.S. and China

Sponsor: OUSD(R&E) STPE / MTA
USG Champion: Patrick Lee Director, Science & Technology Exploitation and Analytics
Highest classification level: Unclassified

Project Description:

The U.S. and China have both recently publicly released technologies they have identified as critical to their own respective national security. The goal of this project is to use data visualization to show the overlap and differences between these critical technologies to the U.S. and China, and communicate to senior-level DoD leaders these insights in the most efficient way possible to inform their decision-making. The potential sources of information may include, but is not limited to:

1) U.S. Critical and Emerging Technologies (C&ET) list (https://www.whitehouse.gov/wp-content/uploads/2022/02/02-2022-Critical-and-Emerging-Technologies-List-Update.pdf);
2) The Office of the Undersecretary of Defense for Research and Engineering (OSD(R&E)) critical technology areas (https://www.cto.mil/wp-content/uploads/2022/02/usdre_strategic_vision_critical_tech_areas.pdf); and

3) China's 14th Five-Year Plan (https://cset.georgetown.edu/publication/china-14th-five-year-plan/).

The White House released an updated C&ET list in February of 2022 that identified advanced technologies of potential significance to U.S. national security and is an update to the initial list released in October of 2020. In February of 2022, The Office of the Undersecretary of Defense for Research and Engineering (OSD(R&E)) also identified 14 critical technology areas that are vital to maintain national security. In March of 2021, China released their 14th Five-Year Plan, covering the years 2021-2025, as passed by the Chinese parliament, the National People's Congress. It includes 7 cutting-edge science & technology (S&T) fields related to national security and development, 4 major national S&T infrastructure projects, 8 manufacturing sectors to increase their core competitiveness, and 7 key industries for the development of a digital economy.

Expected Output:

Visualizations to integrate these different data sources and determine what types and features of visualization most efficiently convey information associated with critical technologies to the U.S. and China.

06 Growing and Protecting the STEM Pipeline

Sponsor: OUSD(R&E) Strategic Technology Protection & Exploitation
USG Champion: Robert Irie, Deputy Director, Strategic Technology Protection & Exploitation
Highest classification level: Unclassified, could involve SECRET

Project Description:

R&E is developing a systems dynamic model of the STEM talent pipeline flow. This project will leverage the model to identify and develop strategic insights and recommendations on how to strengthen the STEM pipeline and make it resilient to unwanted external influences. There will be opportunities to identify/incorporate new open-source information, test hypotheses against the model, modify/extend the model for other applications and flows, and apply the model in a game theoretic context.

08 CFIUS Over the Horizon Forecasting for Critical and Emerging Technologies

Sponsor: OUSD(I&S) CL&S
USG Champion: Kristoffer Buquet, Chief TechProtect Div

Project Description:

The Foreign Ownership, Control, and Influence (FOCI) threat to our current and future Critical and Emerging Technologies continues to grow and become more invasive. The is further compounded by the direct foreign investment, both private sector and Foreign Government

Control, in U.S. companies as highlighted by the Committee for the Foreign Investment in the U.S. (CFIUS) process.

This project would focus on an identified technology area/sector, and the U.S. companies working on or directly supporting the identified technology. The scoped example would be to define companies working on our Critical and Emerging Technologies (C&ET) down to the cage code as they relate to the identified technology, and as determined based on a defined proximity to a DoD facility/installation.

Highly desired skill sets include analytical skills, critical thinking and writing skills, excellent research abilities and general knowledge management processes.

Expected Output:

- Predictive analysis or over the horizon forecast of what companies working on an identified C&ET may be susceptible to direct foreign investment or FIE activities directed at those identified companies/cage codes.
- Detailed documentation of the methodology for the research and analysis that can be replicated or applied to other C&ET areas and able to be scalable in effort.
- Development or refinement of a risk-based taxonomy that can be applied to companies/cage codes to then be leveraged at a strategic level in the Department and beyond."

09 Sustaining Support for Critical and Emerging Technology Protection

Sponsor: OUSD(I&S) CL&S
USG Champion: Kristoffer Buquet Chief TechProtect Div
Highest classification level: Unclassified, could involve SECRET

Project Description:

"This project would focus on compiling current unclassified critical technology lists in the Department and for direct support to the Critical Technology Protection and Integration Cell (CTPIC) and BLUE ADVANTAGE Assessment efforts. Highly desired skill sets include analytical skills, critical thinking and writing skills, excellent research abilities and general knowledge management processes.

Bkgd: The current DepSecDef directed OUSD(R&E) developed Critical Technologies and Programs (CT&P) lists exists only in a classified enclave environment. This consolidated DoD list does not exist at the CUI level, however such a list is vital for the continued protection of U.S. C&ET as identified by Hon Moultrie in his "Memo for Sustaining Support for Critical and Emerging Technology Protect".

Expected Output:

- Provide a common understanding of CUI level critical technologies and associated cleared DIB companies via the developed CUI list. This would be done via the consolidation and identification of current unclassified level critical technologies lists; including but not limited to the R&E Strategic Vision List, Small Business Innovation Research list, etc.
- Detailed documentation of the lists assembled, including the sources derived from, and the methodology for the research and analysis that can be replicated or applied to this and other efforts regarding the development and refinement of critical technologies lists at the CUI level.
- The development or refinement of a risk-based taxonomy that can be applied to critical and emerging technologies and cleared DIB companies to then be leveraged at a strategic level in the Department and beyond."

12 America's Supply Chains

Sponsor: OUSD(I&S) CL&S
USG Champion: Stephanie Andrews DCSA LNO
Highest classification level: Unclassified, could involve SECRET

Project Description:

Implementing Recommendations supporting the Supply Chain Resilience Working Group's Action Items from the EO.

DoD is prioritizing developing a Plan to implement recommendations in the Executive Order (EO) 14017 One-year Report, and will begin implementation over the summer. To inform one line of effort is research of EOs, DoD Directives, Instructions, and policies and provide substantive input into an Enterprise-level Supply Chain Resilience Strategy to protect critical and emerging technologies. This includes FOCI threat and vulnerability information sharing and data sets, and refining a risk taxonomy to leverage at a strategic level. Skill sets required include: Excellent research, critical thinking, writing and analytic skills.

Expected Output:

Input into Implementation Plans, risk taxonomy development, and identifying FOCI threat and vulnerability information sharing impediments and ways to overcome these to increase supply chain resilience within the Department.

13 US Allies and Partners Intelligence and Security Modernization

Sponsor: OUSD(I&S) (potentially DA G2, FORSCOM, INSCOM, or Army Futures Command)
USG Champion: COL Darius Ervin, MILDEP to DDI CI&S

Project Description:

As we move forward, is there a time in which our Allies and Partners will outpace us in executing transformational change that the US will be disadvantage or no longer viewed as the partner of choice?

US Allies and Partners are in the midst of modernization at various intervals of their Intelligence Infrastructure (Collection, Analysis, Production and Dissemination). Our Allies and Partners are essential to operations in competition and conflict. We will continue to engage with them via exchanges of liaison officers, collaborating in modernization forums, and exchanging perspectives to better understand one-another in service-to-service talks. We are seeking ways to share information and establish relationship and networks to support our combined needs in competition and conflict.

Expected Output:

Findings delivered in paper/assessment with concise briefing.

15 Machine Learning for Ships Identification

Sponsor: NAWCAD, AI and Autonomy Development
USG Champion: Charles Rea Autonomy and AI Applications Division Head
Highest classification level: unclassified

Project Description:

In the SEACOP-21 project. YoLoV4 was used for identification of ships. However, there was a high false positive rate. This was mostly due to lack of data. For example, since most training data were taken from ships in the water, the model would falsely identify a helicopter as a ship. For this project, we aim to augment the identification accuracies of the YoLo model. Namely, the model will be trained to lower the false positive rate. This can be done in multiple ways. First, commercially used datasets such as CoCo can be used in additions to the SEACOPS database. Next, Transfer learning can be used to lower training time of the machine learning model. Lastly, the images can be generated from simulations to serve as augmented data.
- recommended skillsets: computer scientists, Modeling and simulation engineers
- datasets: SEACOP-21 data, open-source datasets, simulation engine such as unity or unreal.

Expected Output:

A comparative study on the effect of multiple approaches listed above on model accuracy, runtime, and hardware requirement. Delivery of the trained model(s), and any computer models from which datasets were generated.

16 Foreign Influence over Small Businesses

Sponsor: OUSD(R&E) SBIR
USG Champion: Susan Celis, Acting Director SBIR/STTR Program Manager

Project Description:

Research into foreign influence over small businesses and help us with determining Paperwork Reduction Act requirements to address implementation of the various legislative provision that go along with performing due diligence and setting up some processes.

Expected Output:

Determine Paperwork Reduction Act requirements to address implementation of the various legislative provision that go along with performing due diligence and setting up some processes.

18 Mapping competitor efforts in chem and bio weapons S&T

Sponsor: USAFSAF/CDM ISSO
USG Champion: Pelayo Fernandez, SAF/CDMAI (ISSO)

Project Description:

Develop a "map" or "ecosystem diagram" that details the PRC efforts in chem and bio weapons science and technology and research and development. The students could be guided to provide "data recon" or research specific aspects of the ecosystem, searching for open source data sources, accessing them, downloading them into a storage and translation as needed with or without machine translation assistance. I'm positive there would be much to translate. They would need to use misattribution and secure means of searching and downloading such as using SILO, which could be provided, if their institution doesn't already have them, and learn those techniques. They could use their own institution's library services as data resources. Maybe they can leverage SciK4 as well.

19 Impact of cyber events on supply chain and business operations

Sponsor: OUSD(A&S)
USG Champion: John Garstka, Director for Cyber within the Office of the Chief Information Security Officer, A&S

Project Description:

Interns would research publicly available data sets on impacts of cyber events on supply chain and business operations. Working under UMD faculty supervision, interns would then structure this data for use with UMD's Tapestry platform for risk analysis. Results would inform DoD on how cyber events can impact mission resilience.

20 Unauthorized disclosures (UDs) and the 24-hour news cycle

Sponsor USG Champion: Erica S. McLennan, Chief DoD OPSEC
OUSD(I&S) CL&S PHYSEC&OPSEC
Highest classification level: CUI

Project Description:

The 24-hour media, largely driven by profits based on commercial sponsorship for increased viewership, there has been a noticeable decline in journalistic veracity focused on National Security best interests. Network and cable news competition is encouraging the broadcasting of more sensational news stories, including those based on anonymous sources with potentially dubious intentions. This development has proven detrimental to the relationship between the media and DoD, and appears to coincide with increased unauthorized disclosures. At minimum, personnel are required to take initial OPSEC training and annually thereafter. Despite the training, UDs (whether deliberate or not) continue to be an issue. This calls into question the content and method of the training, and if there are more effective methods to deter UDs.

What are the links, motivations, causes, and preventative recommendations associated with the 24-hour news cycle's impact on unauthorized disclosures (UDs) and what impact does DoD OPSEC training have on preventing UDs? Are there more effective ways to prevent UDs?

Expected Output:

A report that provides insight into UD motivations and recommendations for better preventative actions and training.

21 Characterizing Identify in a Digital World (TS/SCI)

Sponsor: Defense Intelligence Agency (DIA)
USG Champion: MAJ Nathalie Dunlop, 984-4102, DCO
Highest classification level: TS/SCI
Project Description: classified

21 NLP for Media Classification (TS/SCI)

Sponsor: Defense Intelligence Agency (DIA)
USG Champion: MAJ Nathalie Dunlop, DCO, DIA
Highest classification level: TS/SCI
Project Description: classified

32 How Strategic Competitors Use AI/ML

Sponsor U.S. Army Futures Command / Future Force and Concepts
USG Champion: LTC Mark Askew, Future Force Branch Chief
Highest classification level: up to SECRET

Project Description:

Competitors' use of AI/ML: Identify differences in how our great power competitors will likely employ AI/ML within their own capabilities and operational approaches, based on their various geopolitical and scientific backgrounds. (How should we expect non-Western militaries to employ AI/ML?)

Problem: How AI/ML will be employed is heavily informed by those developing its algorithms, available data, and methods of testing. As our great power competitors come from non-Western backgrounds and have different geopolitical threats and opportunities, better understanding their AI/ML foundations, development approaches, and expected employment practices will help U.S. forces better prepare our own approaches and counter-approaches – within competition, crisis, and conflict.

Process: Evaluate how Chinese and Russian scientists and national security/defense officials are developing and testing AI/ML, including (as possible) those algorithms included within future warfighting capabilities. Compare these efforts with Western (U.S. and our allies) processes to identify what important differences and similarities exist.

Expected Output:

Output: Identify the inputs and refinements to Chinese and Russian AI/ML developments, and opportunities and challenges for U.S. defensive and offensive operations in competition, crisis, and conflict.

33 Algorithms for Threat Detection

Sponsor: National Geospatial-intelligence Agency (NGA)
USG Champion: John T. Chavis, NGA-Research Predictive Analytics Pod

Project Description:

In the 2022 Algorithms for Threat Detection (ATD) challenge, participants will create multivariate time series forecasters capable of predicting national-level geopolitical event counts.

Namely, the challenge will utilize the GDELT dataset (https://www.gdeltproject.org/), which uses the CAMEO coding system to record events and attribute them to organizations or state actors. A subset of the events considered by the dataset include instances of the terms protests, threats, providing aid, engaging in diplomatic cooperation, and assaults.

In this challenge, the GDELT dataset will be aggregated on a weekly basis and at a national level of fidelity. Participants will create multivariate time series forecasters that, given the history of event counts over all countries in the dataset, predict the number of events for each event type and for each country for the following week. Models will be evaluated by back-testing the model on historical data and then using standard time series metrics, after which they will be compared against baseline algorithms and the algorithms developed as part of the ATD challenge.

34 Ground Level Imagery Geolocation

Sponsor: National Geospatial-intelligence Agency (NGA)
USG Champion: Chris Mikrut, NGA-Research Image & Video Pod

Project Description:

GLIMPSE is a project that geolocates ground-level social media images that lack metadata. The GLIMPSE pipeline is currently composed of eight modules. One module, called the Interest module, filter images based on content within the image. We are looking for an intern to train the Interest module. This training will use existing test images collected by the GLIMPSE team. The test data does have some images that have been categorized as interesting subjects, but the intern will need to review the categories for positive, near-positive, and negative examples. The intern will need to run the Interest module to understand how the model is performing and make modifications to the model as needed.

Training the Interest module will give GLIMPSE the capability to reduce the throughput of images that will have to be fed through the GLIMPSE pipeline. This could be a great learning task for an intern and will be another step forward for the GLIMPSE team. An intern with a background in computer science could benefit from this summer research experience because they will learn about a complete image processing pipeline and gain machine learning skills.

35 Open-Source Research to Map Crop Types in Data Sparse Regions Using Machine Learning

Sponsor: National Geospatial-intelligence Agency (NGA)
USG Champion: Dr. Natasha Krell, Office of Sciences and Methodologies (ATS)

Project Description:

Identifying specific crop types in remotely sensed imagery is a rapidly growing field because of advancements in machine learning. Having accurate and abundant data labels of different crop types is key; however, it is not always available in regions where data is sparse. Possible datasets to explore include NASA Harvest's CropHarvest dataset and USDA Croplands data layer.

Interns will work with scientists at the NGA Analysis Directorate's Office of Sciences & Methodologies on research to map crop types in regions with sparse data. Tasks may include

- Acquiring open-source datasets on crop types for regions of interest.
- Ingesting data into the Google Earth Engine and running random forest models to classify land cover and crop types.
- Running change detection algorithms to determine changes in planting and harvesting.
- Visualizing data in compelling and innovative ways.

40 Modeling AI Operational Outcomes

Sponsor: Joint AI Center (JAIC)
USG Champion: Chad Bieber, Director T&E Operations
Highest classification level: CUI/NF needed

Project Description:

The Smart Sensor ASP Brain provides platform agile UAS autonomy in comms denied environments by sensing targets of interest with multispectral, SAR, and RF sensors and sending out a fused target report. This task will build the endogenous and exogenous reasoning workflow of the Smart Sensor ASP Brain, including inputs to the sensors, the CV AI algorithm, the reasoning system, the target report sent to the user, and the user decision.

43 Visualizing Forensic Data in OSINT Knowledge Graphs

Sponsor: Office of the Director of National Intelligence
Highest classification level: Unclassified

Project Description:

RISC interns will develop designs, wireframes, and prototypes for forensic visualizations for large-scale knowledge graphs. Interns will work with existing knowledge graphs, interview prospective end-users, develop user stories, and user models. Results will inform production requirements for forensic visualizations. Interns will work with the larger project team, and other RISC teams in a co-development environment.

44 Training and Testing Text Extraction Utilities on Public Reports

Sponsor: Office of the Director of National Intelligence
Highest classification level: Unclassified

Project Description:

RISC interns will develop a series of Python libraries to support extraction of various linguistic features from English documents. These libraries will be "wrapped" into scripts that may be executed in a production Natural Language Processing (NLP) document processing pipeline. Extraction libraries will support a larger research agenda in processing AI Incident reports. Interns will work with the larger project team, and other RISC teams in a co-development environment.

45 Modeling Distributed Analysis with Software Instrumentation

Sponsor: Office of the Director of National Intelligence
Highest classification level: Unclassified

Project Description:

RISC interns will develop a proof-of-concept demonstration illustrating how software instrumentation might be used to identify analysts working on the same topical material on an ad hoc basis. In turn, this work informs how ad hoc distributed, analytical teams might be created through the software tools that support tradecraft. Interns will work with existing, open-source instrumentation libraries, develop (where necessary) new features for instrumentation and data processing, and work with operationally-relevant analytical tools to create this demonstration.

46 DevSecOps in Distributed Development Teams

Sponsor: Office of the Director of National Intelligence
Highest classification level: Unclassified

Project Description:

RISC interns will develop a proof-of-concept demonstration illustrating how software dependency auditing might result in aggregated, prioritized reports summarizing key risk indicators of packages used across projects in larger product portfolios. This work informs how the IC/DoD might make tactical and strategic decisions on addressing open-source vulnerabilities with maximum impact on larger portfolio's security posture. Students will work with existing open-source libraries in-step with library developers at In-Q-Tel Labs. Interns will evaluate packages used in other ARLIS work.

47 Measuring the Quality of Learning from Simulations

Sponsor U.S. Army Futures Command / Future Force and Concepts
USG Champion: MAJ Mark Askew, Future Force Branch Chief
Highest classification level: up to SECRET

Project Description:

Learning within futures experimentation: Developing metrics for measuring the confidence levels of learning when experimenting - including in wargames - with future technologies, capabilities, and concepts (How do we increase our confidence in wargame results and validate our future concepts with experimentation)

Problem: The Army lacks metrics to determine the quality of learning derived from experimentation (to include wargaming, modeling, and simulations) with respect to future technologies, capabilities, and concepts (how we could be equipped, organized, or operate)

Process: Evaluate the current Army futures-focused wargames and simulations that are testing future technologies, capabilities, and concepts to identify additional and/or better ways (whether new or pulling from civilian best practices) for how the Army can improve our experimentation methodological rigor and make more informed investment decisions.

Expected Output:

Develop refined methods and new metrics for determining learning confidence levels for new technologies, capabilities, and concepts that the Army could incorporate within

49 Auditing Insider Risk

Sponsor: OUSD (I&S) CL&S InT
USG Champion: Brad Millick, Director, DoD Insider Threat Program

Project Description:

What non-obvious measures/data/models exist for “Insider Risk Audits”? A survey of different commercial sectors to see what is used for measuring risk to better enable a fresh look at understanding risk

50 Changing Motivations in Insider Threats

Sponsor: OUSD (I&S) CL&S InT
USG Champion: Brad Millick, Director, DoD Insider Threat Program

Project Description:

How have the primary motivations for insider threats changed over time? How do political climates or other social factors play a role in insider threat actions? How can we apply these observations to better detect and mitigate insider threat risk in the future?

- Research insider threat/espionage case studies over the past 50 (or however many) years. The comparison of the stated motivations of the individuals may reveal a change in motivations of time.
- Money, Ideology, Coercion, and Ego (MICE) have previously been argued to be the 4 prime motivators for espionage. Are these motivations consistent in all forms of insider threat or are there other categories to be considered? Have new motivators developed over time? "

51 Insider Threat - Extremism vs Foreign Terrorism

Sponsor: OUSD (I&S) CL&S InT
USG Champion: Brad Millick, Director, DoD Insider Threat Program

Project Description:

What lessons can we learn from the past two decades of fighting foreign terrorism that we can apply at home to combat radicalization towards extremism within the workforce?

Literature review focusing on poste 9/11 studies into the nature of foreign terrorism and recruiting efforts. Examine similarities between those efforts and current recruiting conducted by extremist organizations.

54 Securing the Cloud: Blue Team

Sponsor: Strategic Capabilities Office (SCO)
USG Champion: Chris Appleby / TBD
Faculty POC confirmed

Project Description:

SCO is exploring security vulnerabilities in container platforms such as Kubernetes, Azure, and Amazon Web Services. This summer interns will participate in a vulnerability analysis of at least one of these platforms configured to support an example application. In the process, we will better understand the security mechanisms provided by these platforms, and the interns will learn different ways a device or system vulnerability assessment can be accomplished.

(Blue Team) Create and defend a secure web site

This team will create and instrument a secure website using Kubernetes (or similar containers system). It will have at least three secure topics (financial, PII, deliverables).

55 Securing the Cloud: Red Team

Sponsor: Strategic Capabilities Office (SCO)
USG Champion: Chris Appleby
Faculty POC confirmed

Project Description:

SCO is exploring security vulnerabilities in container platforms such as Kubernetes, Azure, and Amazon Web Services. This summer interns will participate in a vulnerability analysis of at least one of these platforms configured to support an example application. In the process, we will better understand the security mechanisms provided by these platforms, and the interns will learn different ways a device or system vulnerability assessment can be accomplished.

(Red Team) Find vulnerabilities in a secure web site.

This team will perform a vulnerability assessment on a containerized website.

56 Declass part 2: systems and policy-oriented

Sponsor: Air Force Concepts, Development, and Management (SAF/CDM)
USG Champion: Jeff Starr / TBD

57 AI Bias and Barriers to Diversity and Inclusion in the Defense Workforce

Sponsor: Air Force Concepts, Development, and Management (SAF/CDM)
USG Champion: Jeff Starr / TBD

58 Language Expertise + Social Media

Sponsor: National Counterintelligemce Task Force (NCITF)
USG Champion: Timothy Clifton

Project Description:

help with social media reporting on topics of significance

ARLIS projects (no faculty mentors needed)

24 Information Competition Simulator

Sponsor: U.S. Special Operations Command
Faculty USG Champion: Matt Venhaus, ARLIS

Project Description:

- Translate polling results into statistical distributions to feed the creation of software-based agents,
- Design and implement a user interface for the Simulation system,
- Develop API to transfer results of media processing to Agent factory,
- Research foreign populations' media consumption patterns,
- work with modelers and programmers to develop software documentation and User's guide,
- conduct background social science research to ensure that computer models are consistent with the state of the practice social science understanding of human behavior, assist in the development of a WBS for a complicated project with participants drawn from several universities and locations.

(subset of tasks to be assigned depending on the skills, interests and number of interns available)

26 Computational Cultural Understanding

Sponsor: DARPA
Faculty USG Champion: Victor Frank, ARLIS

Project Description:

To assist negotiations and aid critical interactions, DARPA developed the Computational Cultural Understanding (CCU) program. The goal of CCU is to create a cross-cultural language understanding service to improve a DoD operator's situational awareness and ability to effectively interact with diverse international audiences. The program seeks to develop natural language processing (NLP) technologies that recognize, adapt to, and recommend how to operate within the emotional, social, and cultural norms that differ across societies, languages, and communities.

Interns will work with ARLIS researchers to support test and evaluation for this CCU program.

28 DECLASS

Sponsor: OUSD(I&S)
Faculty USG Champion: Mike Brundage, ARLIS
Project Description:

29 HIATUS

Sponsor IARPA
Faculty USG Champion: Mike Rytting , ARLIS
Project Description:

30 INFER

Sponsor: Open Philanthropy
Faculty USG Champion: Adam Russell, ARLIS
Project Description:

31 Project Maven

Sponsor: OUSD(I&S)
Faculty USG Champion: Pete Loats/Mike Maxwell

Leverage intern language expertise to comb Facebook, Twitter, etc for instances of captured enemy documents in the Ukraine crisis that have been posted on the inter-webs to build up a CEM sample for something more direct action than the JSOC type of use case.

53 Project Blue

Sponsor: Navy
Faculty USG Champion: Moneer Helu, ARLIS