



ISIT Bits and Bots Competition

Competition Dates: May 1st - June 30th, 2024
Registration Deadline: April 25th, 2024



Description: Web traffic today is increasingly dominated by automated agents and web scanners, with the share of automated traffic almost equalling the share of human traffic as of 2022. Detecting malicious automated agents in real-time, especially amidst legitimate web traffic, presents an urgent and critical challenge posing problems in the intersection of information theory, statistics, machine learning, and cybersecurity. The ISIT Bits and Bots Competition focuses on this problem through a set of multidisciplinary tasks. The competition leverages a dataset of more than two million events collected over several months, capturing diverse website activities of human users and automated agents in a real-world setting.

Objective: The competition tasks are twofold:

Defense Task: Bot Detection

- Objective: Design a bot detection mechanism (hypothesis test/classifier) to classify visitors based on activity. The visitors include human visitors and several classes of bots with various behavioral signatures and statistics.
- Evaluation: Detection mechanisms are evaluated and ranked based on time-to-detection and accuracy of detection.

Offense Task: Generative Model for Evasion

- Objective: Develop a generative model simulating human mouse movement behavior to bypass other teams' bot detectors.
- Evaluation: Generative models will be ranked based on probability of evasion and time-to-detection when other teams' bot detectors are deployed.

Eligibility and Participation: The team can consist of up to three members, of which there should be at least two student members. At least one of the student members of the competing team should be registered as a member of the [IEEE Information Theory Society](#) at the time of registering for the competition.

Registration and Link to Training Data: Teams will be able to register for the competition through the [ISIT 2024 website](#) during the registration window. The training data and corresponding loader programs will be made available through the [IEEE Dataport](#) portal.

Team Formation: Each participant may register as a member of a team, or request to be teamed up with other participants by the competition organizers.

Submission of Results: The submission page can be accessed via the [IEEE Dataport](#) portal. Additional information on how to access the portal will be provided through the ISIT website and ITSoc social media platforms prior to competition start date.

Prizes: To be decided

Contact Information: Questions regarding the competition format, eligibility for participation, registration and submission deadlines, and other topics may be directed to the [IEEE ITSoc Student and Outreach Subcommittee](#) or sent directly to fshirani@fiu.edu.

Organizers: Vincent Tan, Hyeji Kim, Marco Mondelli, Stefano Rini, Amin Kharraz, and Farhad Shirani