CAE FORUM

4 November 2020

Stream Data Mining and Applications: Security Perspective (1:00 – 1:45pm EST) and
Ransomware First Response (2 – 2:45pm EST)

Mark your calendar and come join us for CAE Forum! CAE Forum is a live, real-time, online, academic forum where members of the CAE community give non-technical presentations on topics of value to the CAE community. CAE Forum is about sharing your ideas, knowledge, and expertise to empower and strengthen our community. It's that simple. CAE Forum presentations are normally held on the first Wednesday of each month during the Fall and Spring semesters.

Just log in to https://caecommunity.zoom.us/my/caeforum as a guest.

Time: 1:00-1:40pm EST

Presenter(s): Dr. Latifur Khan, University of Texas at Dallas

Topic: Stream Data Mining and Applications: Security Perspective

Description: Data streams are continuous flows of data. Examples include network traffic, sensor data, and call center records. Data streams demonstrate several unique properties that together conform to the characteristics of big data (i.e., volume, velocity, variety, and veracity) and add challenges to data stream mining. In this talk we will present an organized picture on how to handle various data mining techniques in data streams. Most existing data stream classification techniques ignore one important aspect of stream data: arrival of a novel class.

In this talk, we address this issue and propose a data stream classification technique that integrates a novel class detection mechanism into traditional classifiers, enabling automatic detection of novel classes before the true labels of the novel class instances arrive. Novel class detection problem becomes more challenging in the presence of concept-drift, when the underlying data distributions evolve in streams. In this talk we will demonstrate how to make fast and correct classification decisions under this constraint. Furthermore, we will present a semi supervised framework which exploits change detection on classifier confidence values to update the classifier intelligently with limited labeled training data. We will present a number of stream classification applications such as website fingerprinting, real time monitoring, evolving insider threat detection, and textual stream classification. This research was funded in part by National Science Foundation, NASA, Air Force Office of Scientific Research, Sandia National Laboratory, and Raytheon.

Followed by

Time: 2:00 – 2:40pm EST

Presenter(s): Dr. Betina Tagle, University of Maine at Augusta

Topic: Ransomware First Response

Description: Ransomware is a growing invasive cyber-attack that can happen to anyone, anywhere, at any time. How would you respond if you were alone and your screen froze with the words "we have locked your screen you must pay"? What if you were at your place of employment, do you know what procedures you are required to follow? What should your first response be?

A recording of the presentation will be available at: https://www.caecommunity.org/content/cae-forum-resources.

Contact us at: caeforum@caecommunity.org