User Identification through Machine Learning

Proposal for Colorado School of Mines, MCS Field Session, Summer 2018

About Us

TruU is a machine learning startup that is redefining security. TruU's converged security platform is the industry's first system to leverage AI, biometrics, and user behavior to provide a trusted user identity that can seamlessly migrate across digital and physical mediums.

Goal

Problem: Using machine learning techniques to identify a user based on their usage of a computer.

Description

How we use our computer is a signature of our identity. This could be how we type on the keyboard, how we move the mouse, or even which processes we run, their memory footprint, and for how long.

There are three components of the solution to this problem.

a) Pick one data set (out of the three mentioned here) that the team would like to explore and write a program to capture the data. We think that key logger will have the highest likelihood of eventual success.
b) Design and implement an endpoint on a server on AWS and have your capture program write to it.
c) Train machine learning models (including deep learning models if appropriate) on the collected data to identify a user.

For the purposes of this project the team will collect the data from 6-8 users and then use that for training their model.

The Team

This project needs different skills from different members of the team. So, try to find a team which together has the skillsets required. We think that a 3-4 person team should work well. Each member of the team will be paired with a mentor who is a specialist in that area to guide and mentor the team member.

- Data Capture: Systems programming. Proficiency in the native language of the platform. So, Swift for MacOS, or C# for Windows.
- Data Transfer & Upload: Web Development.
- Data Science: Python. Strong math. If you are not experienced in machine learning but have strong interest, we will guide you.

Internships Potential

There is a strong possibility of an internship especially for strong performers.

Location

We expect work to mostly be performed remotely at the team's choice of location. There will be weekly or biweekly meetings which will happen on site at our Denver office. The frequency of the meetings to be determined with the team at the start of the project for maximal efficiency.