Identification of user confusion in a web application

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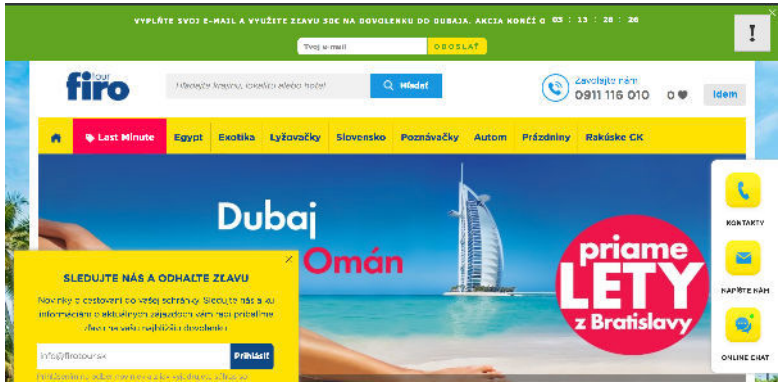
"Confusion is a situation in which people are uncertain about what to do or are unable to understand something clearly."

Goal

Predict user confusion in **real time** for web applications based on logged **mouse interaction data**

Eyetracking user study

- **6** tasks at *FiroTour* travel agency's portal
- **59** participants
- confusion was logged with a **software button** (exclamation mark) situated in the right top corner of the screen
- **95** out of 354 tasks with button press



Results

- **99%** precision on not confused data (real time)
- **40%** precision on confused data (real time)
- **94%** precision on not confused data (prediction after session)
- **40%** precision on confused data (prediction after session)

We compared **logistic regression, random forest** and **multilayer perceptron** classifier.

YesElf

Our method is part of an ongoing commercial project *YesElf*. We implemented a production ready module able to predict the confusion in real time. Hundreds of *YesElf's* customers can use our solution daily.

Mouse features

- Horizontal velocity
- Vertical velocity
- Velocity
- Acceleration
- Distance
- Jerk
- Num. of movements

YesElf