

Real-Time Client-Side Phishing Prevention Add-on

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Phishing is a major problem, which has no definitive solution.

Efficient detection techniques and relevant warnings are needed to steer users away from phishing websites.



<https://ssg.aalto.fi/projects/phishing/>

Drawbacks of current detection techniques

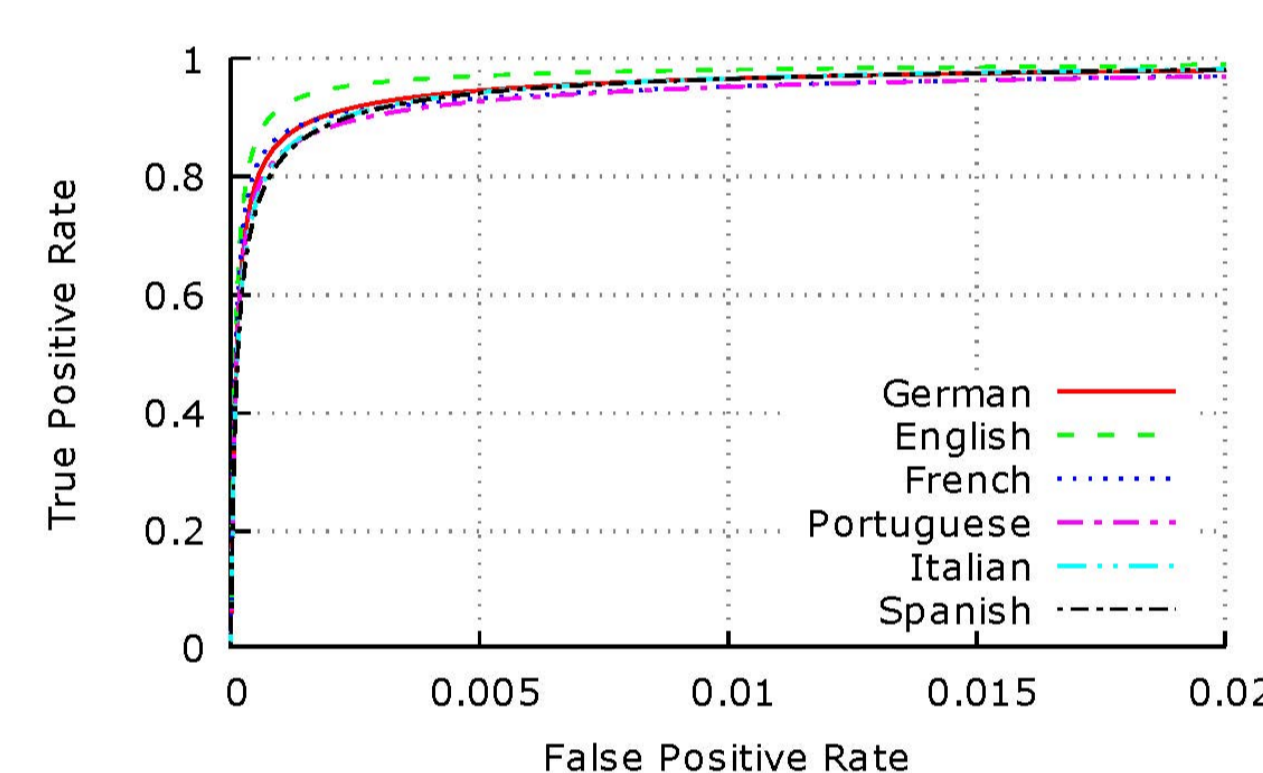
- Server-based solutions raise **privacy concerns**
- Offline analysis induce **delay** in detection
- Warning but **no guidance** for users
- Bag-of-words model implies **language dependency**
- Thwarted by dynamic content

Highlights of our solution

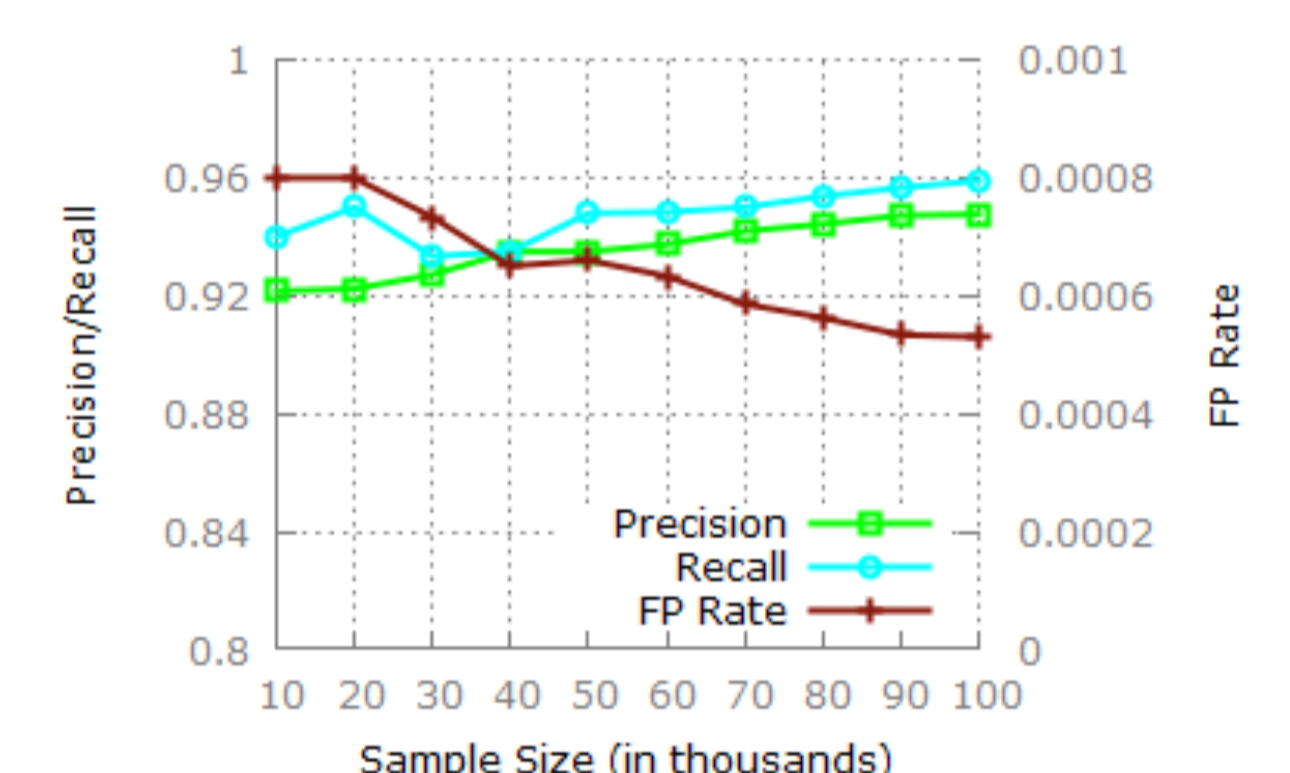
- **Language and brand independent**
- **Resilient to adaptive attacks**
- Ensure user's **privacy**
- **Generalizable** detection model
- **Effective target detection**

Our solution

- Features modelling **phishers' limitations**
- Term usage **consistency** in constrained part
- **Client-side-only** computation
- Infer **potential targets** of the phish and propose **redirection** to the legitimate ones



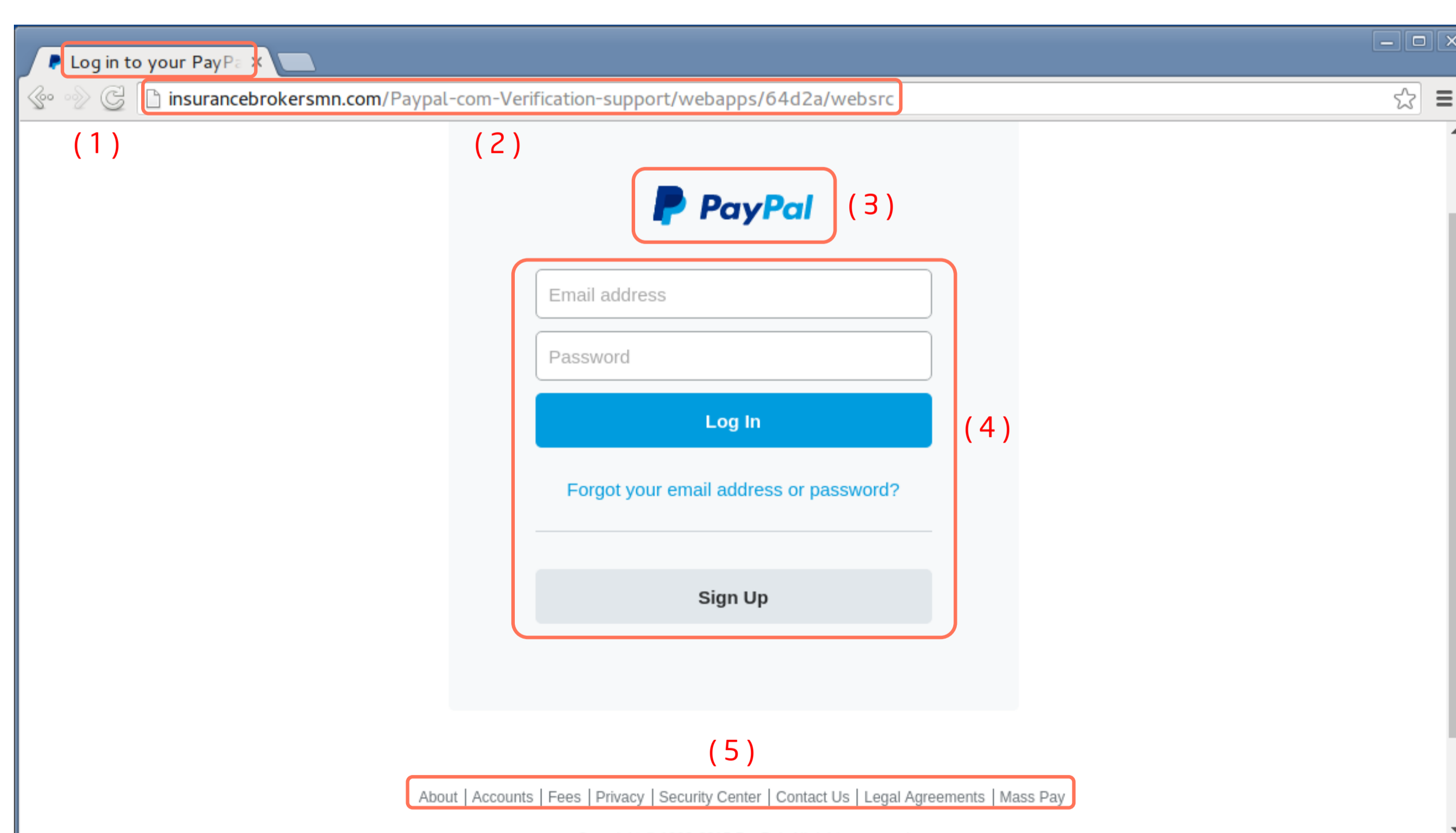
ROC evaluation results for six languages



Performance vs the scale of data

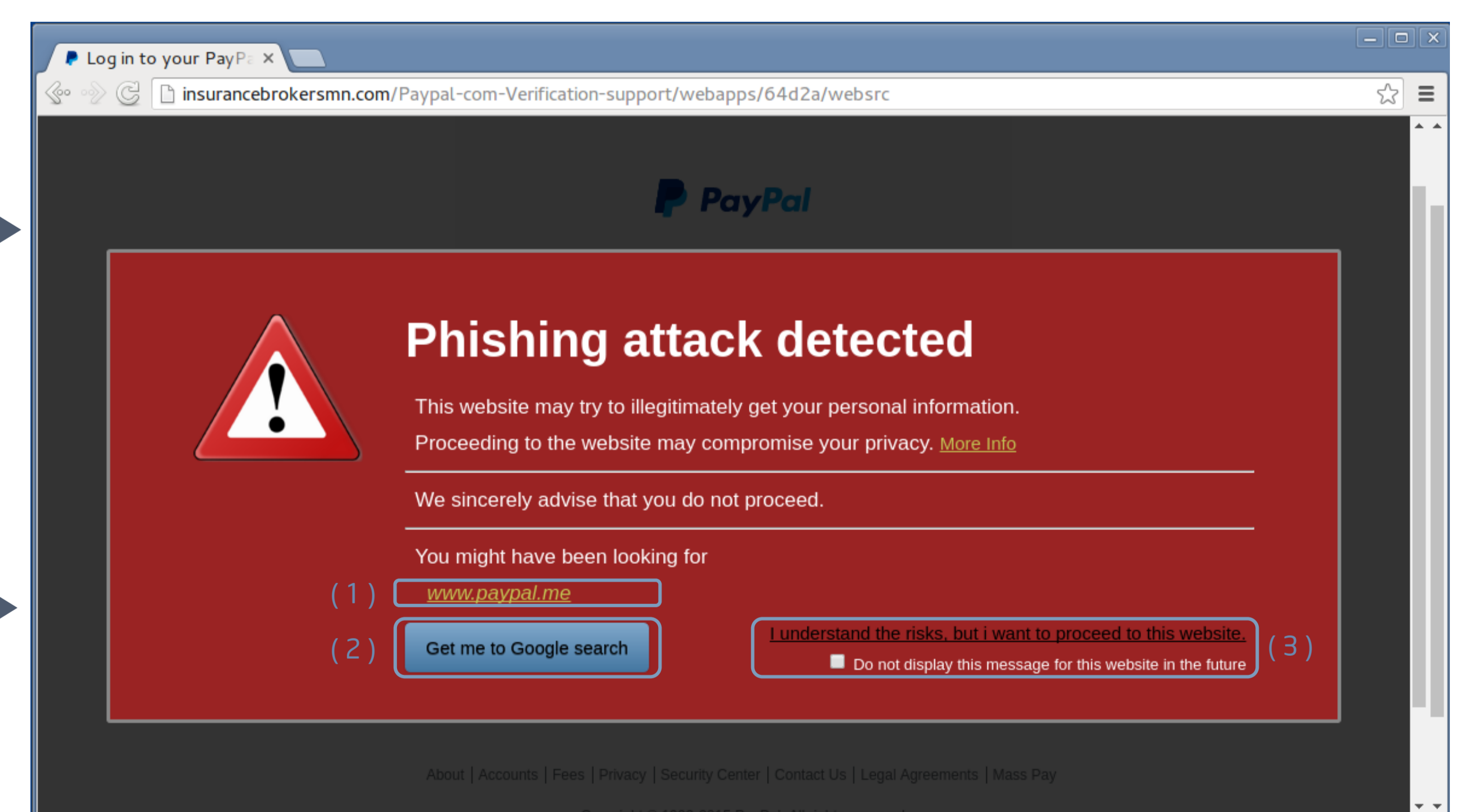
Performance

- **High accuracy: 99 %**
- **Low FPR: 0.1 %**
- **Fast warning: 473 ms median time**



- (1) Title
- (2) Start / Land URL
- (3) Logged links
- (4) Text
- (5) HREF Links

Phishing evaluation



- (1) Redirection to legitimate website
- (2) Redirection to Google search
- (3) Proceed on the website