USING ONLINE ACTIVITY AS DIGITAL FINGERPRINTS TO CREATE A BETTER SPEAR PHISHER

Joaquim Espinhara & Ulisses Albuquerque

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SMART SECURITY ON DEMAND

Agenda

- Introduction
- Motivation
- Background
- HowStuffWorks
- μphisher
- Demo
- Future Work
- Conclusion

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About Us

- Joaquim Espinhara
  - Security Consultant at Trustwave Spiderlabs
- Ulisses Albuquerque
  - Coder for offense & defense... as long as it's fun!
  - Lab Manager at Trustwave Spiderlabs

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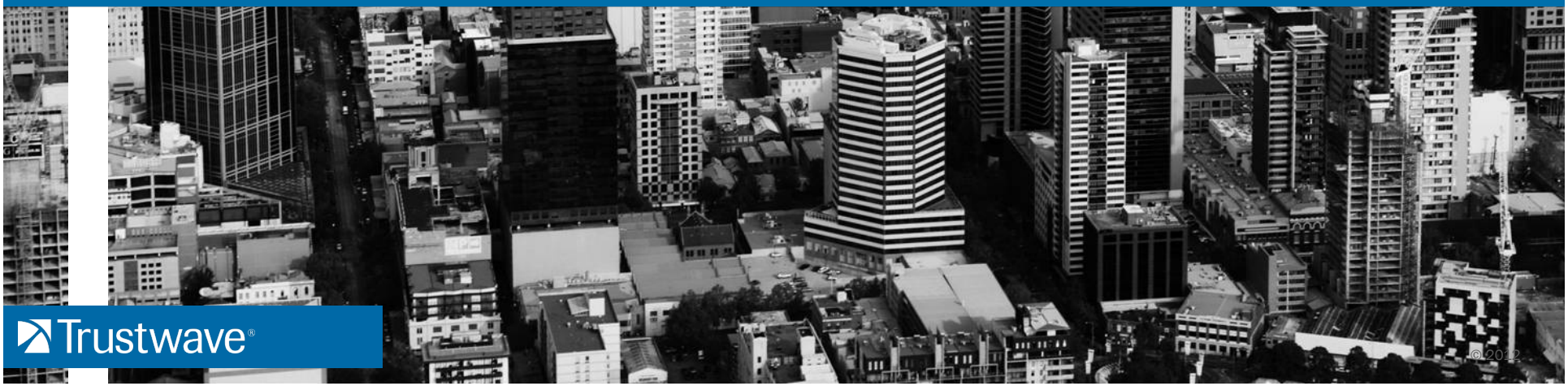
INTRODUCTION



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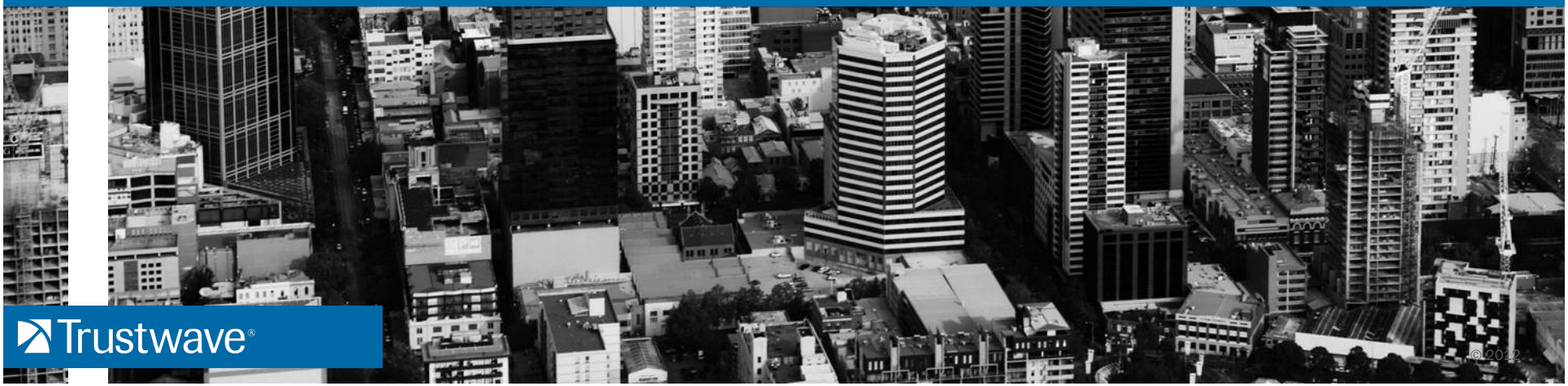
OUR MOTIVATION



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Our Motivation

- Why?
- Tools available

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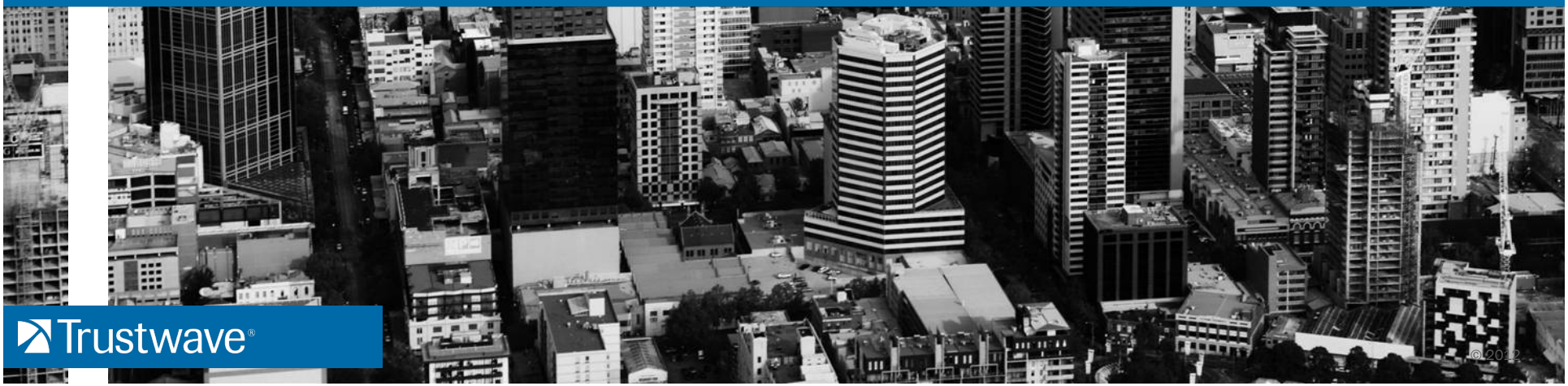
BACKGROUND



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Background

- Social Networks
- Social Engineering
- Data Pre-processing
- Natural Language Processing (NLP)

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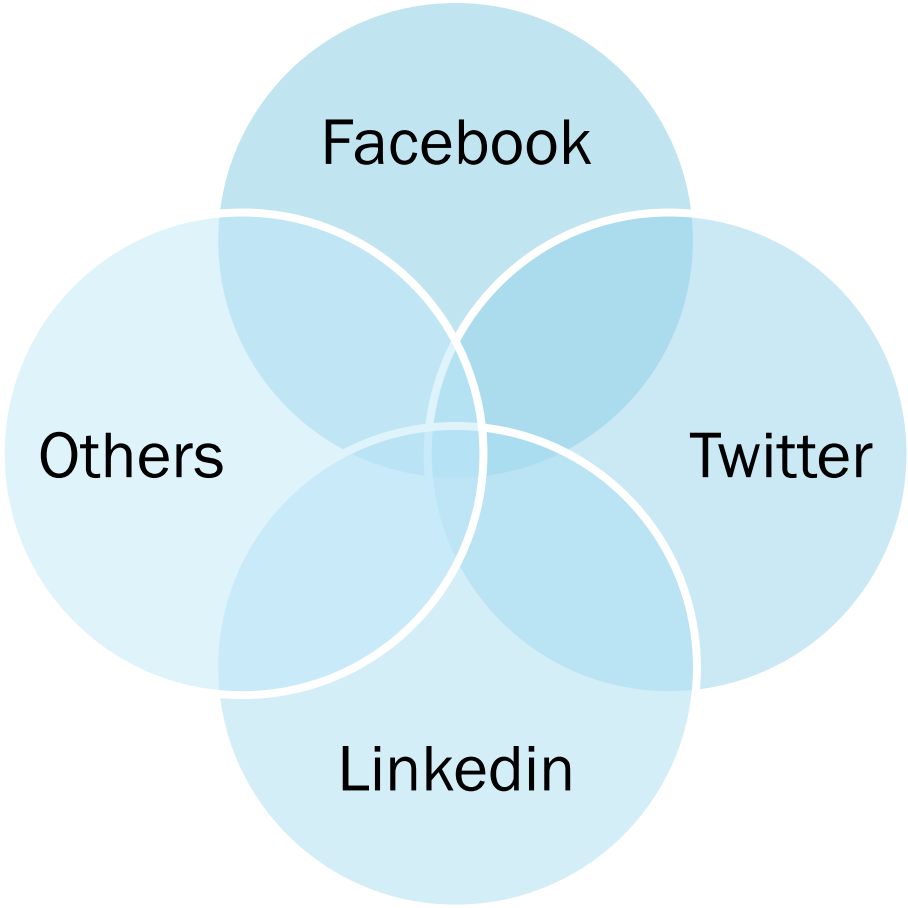
Background

Social Networks



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Background

Social Networks

- Communication channel for keeping in touch with someone (Facebook, Twitter)
- Media sharing (Instagram)
- Specialized networks (GetGlue, TripIt, LastFM, Linkedin)

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Background

Social Engineering

- Phishing

http://www.d00med.net/uploads/0d832c77559a2070a766f899e7eg783.png

Background

Data Pre-processing

- What is it?
- How do we use it?

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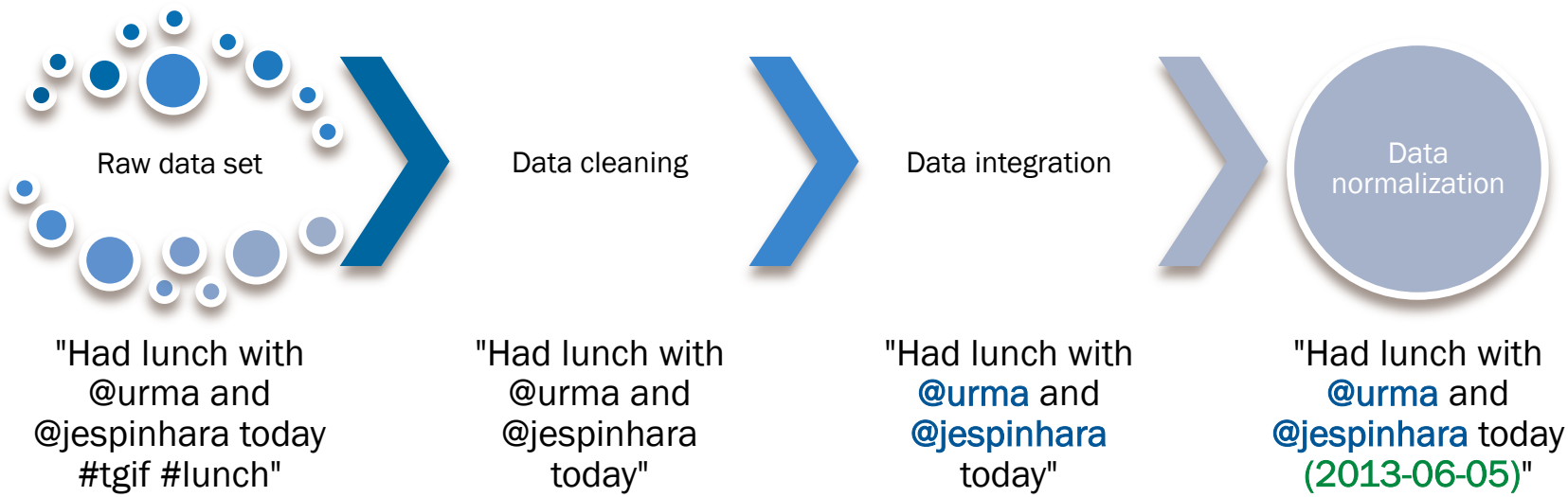
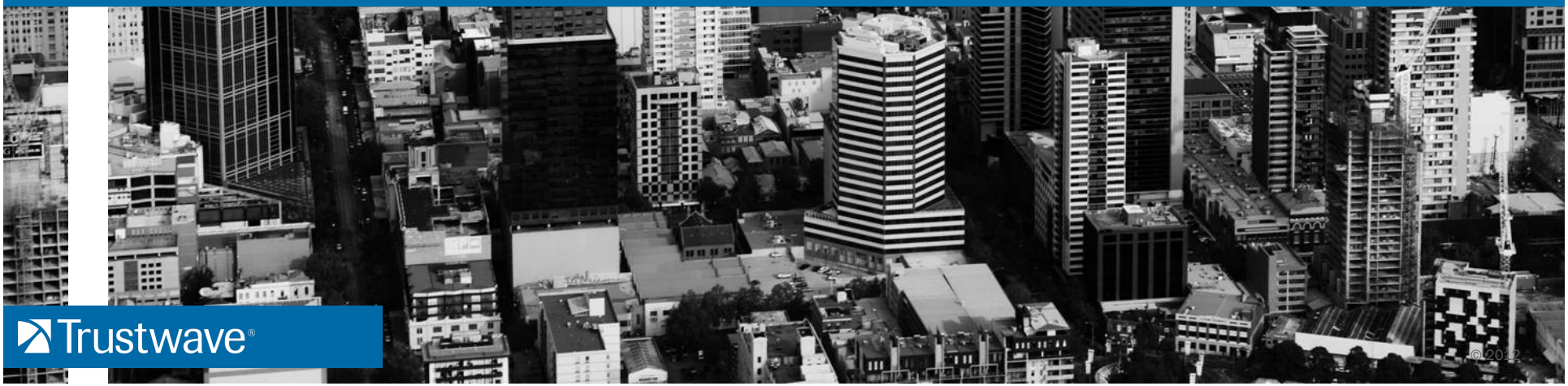
Background

Data Pre-processing

- Data Pre-processing Flow



HOWSTUFFWORKS



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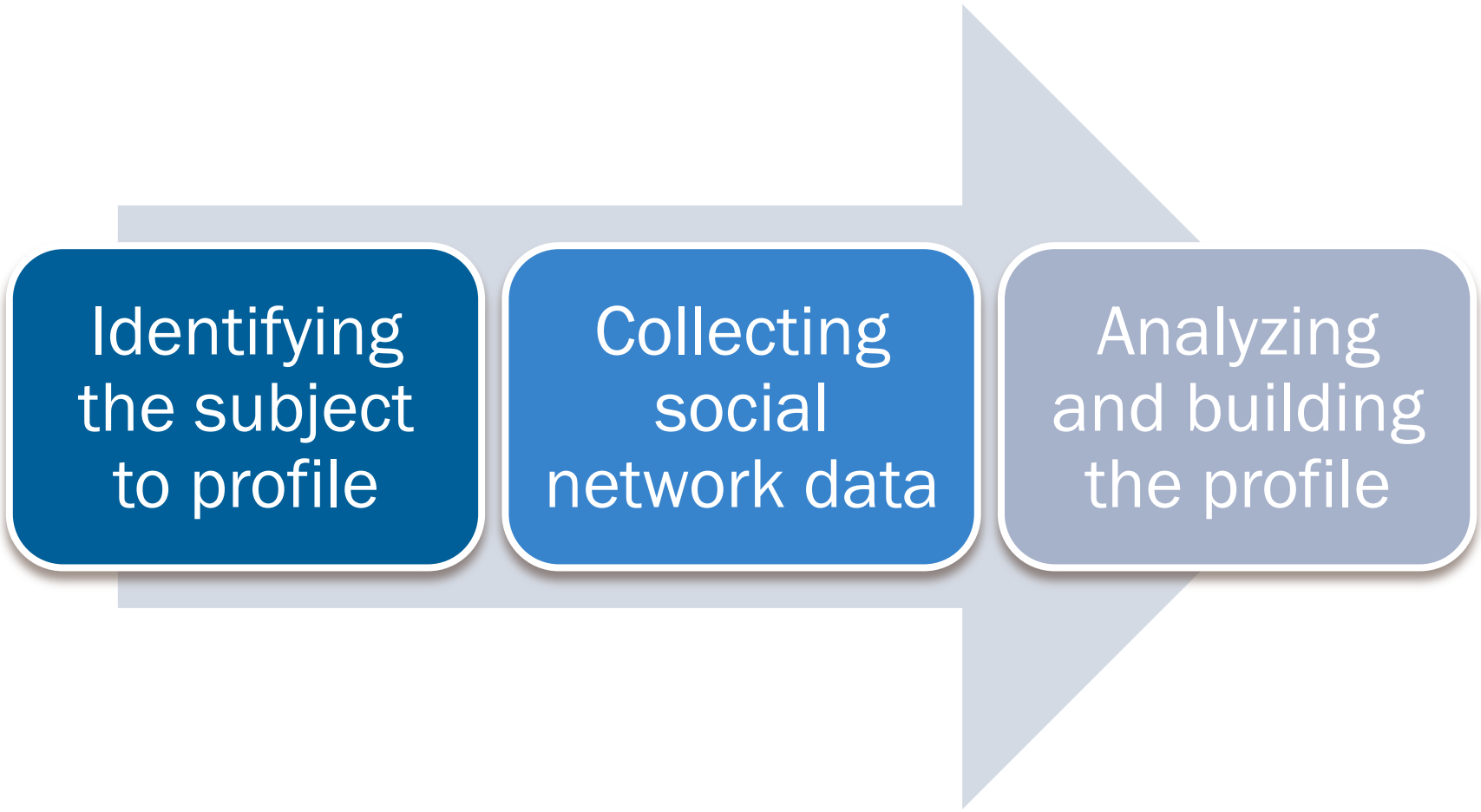
HOWSTUFFWORKS

Our Approach



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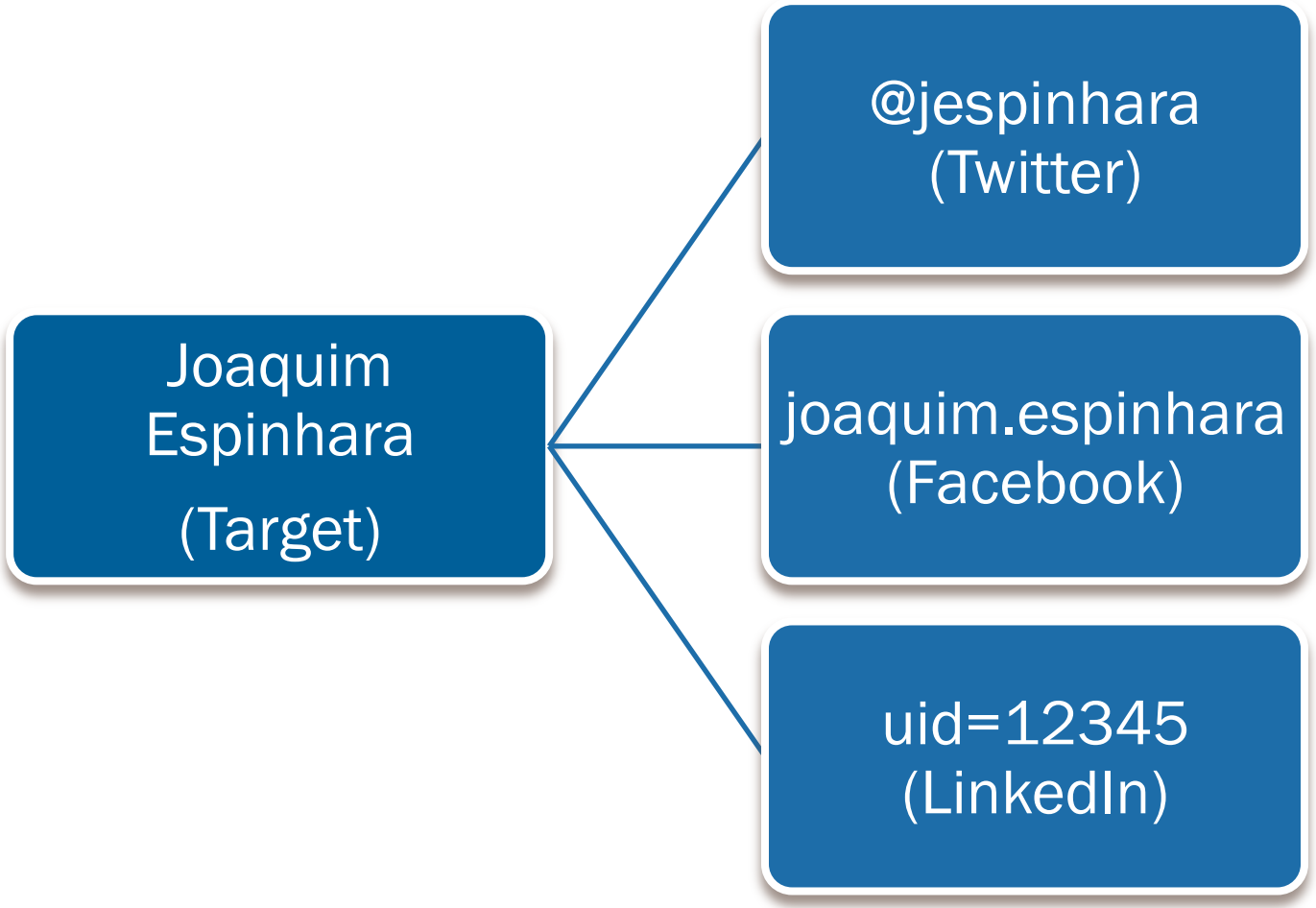
HOWSTUFFWORKS – Our Approach

The Unknown Subject (*Unsub*)



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HOWSTUFFWORKS – Our Approach

Data Collection

- Social Network IDs
- Official APIs
- Web Scraping
- OAuth

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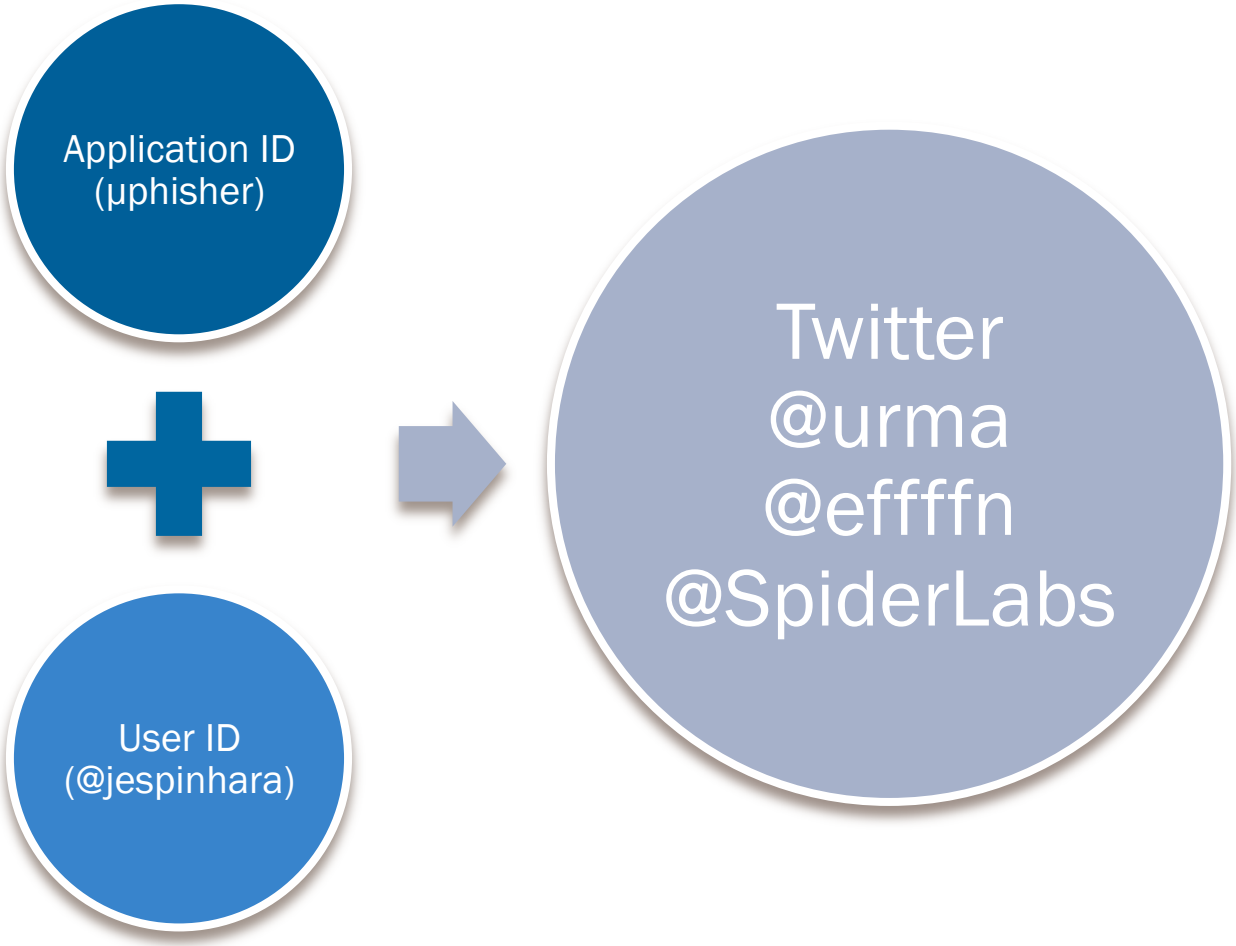
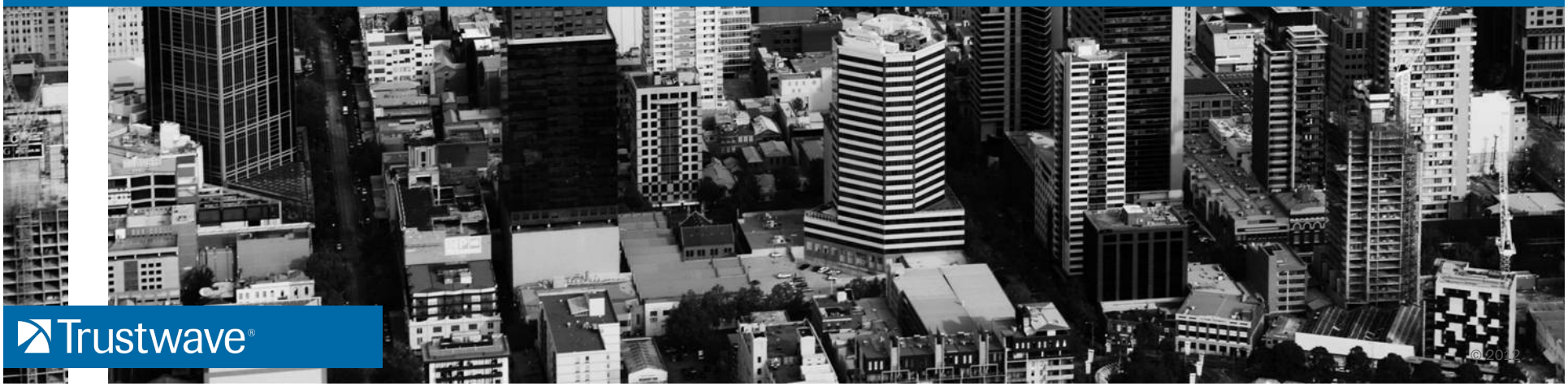
HOWSTUFFWORKS – Our Approach

Data Collection - Twitter



µPHISHER



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Reference implementation

- Goals
  - Validate potential unsub content (Defense)
  - Assisted textual content input (Attack)

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Reference implementation

- Web Application
- Console Application
- Twitter only (for now)
- Open Source (GPLv3)

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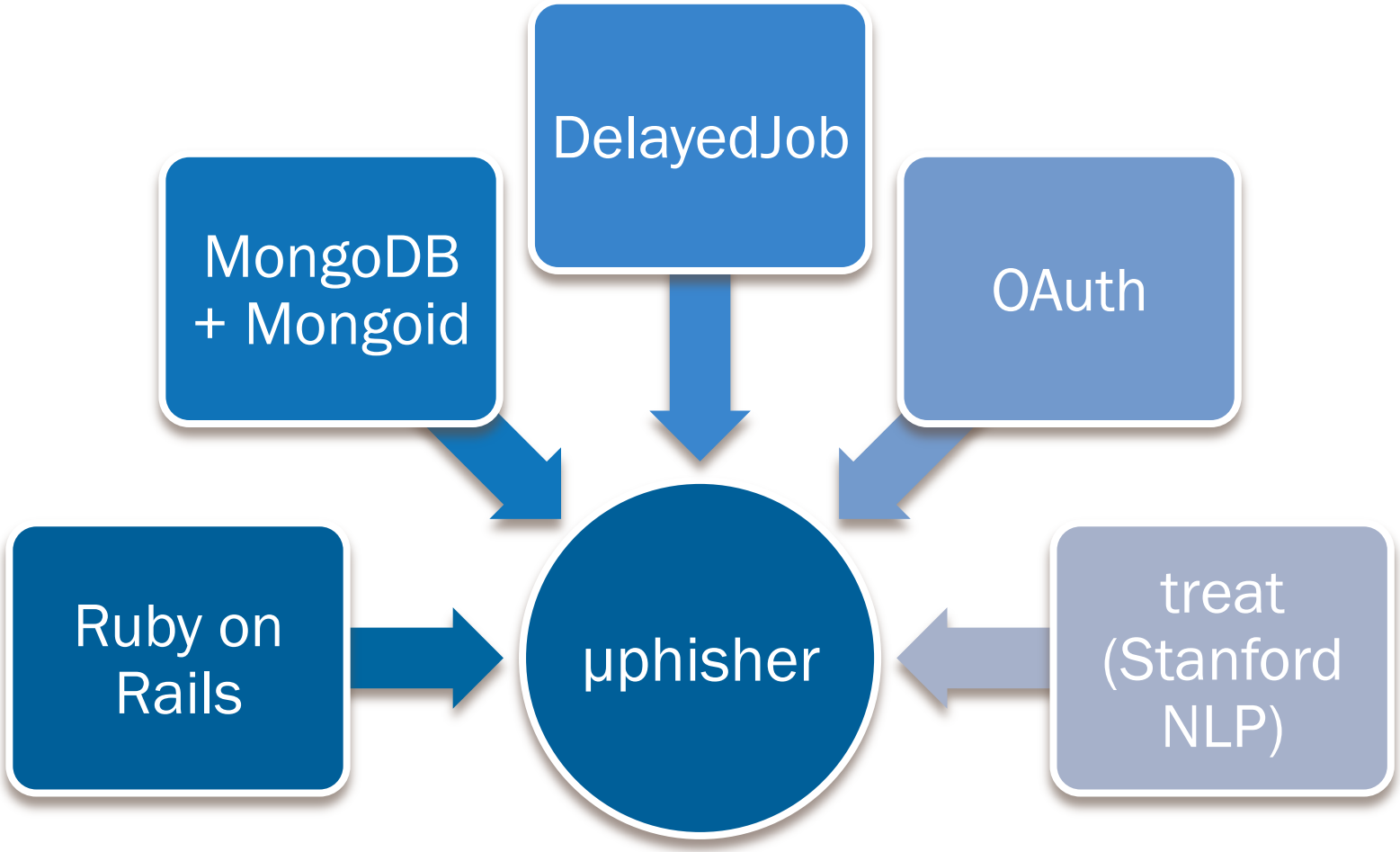
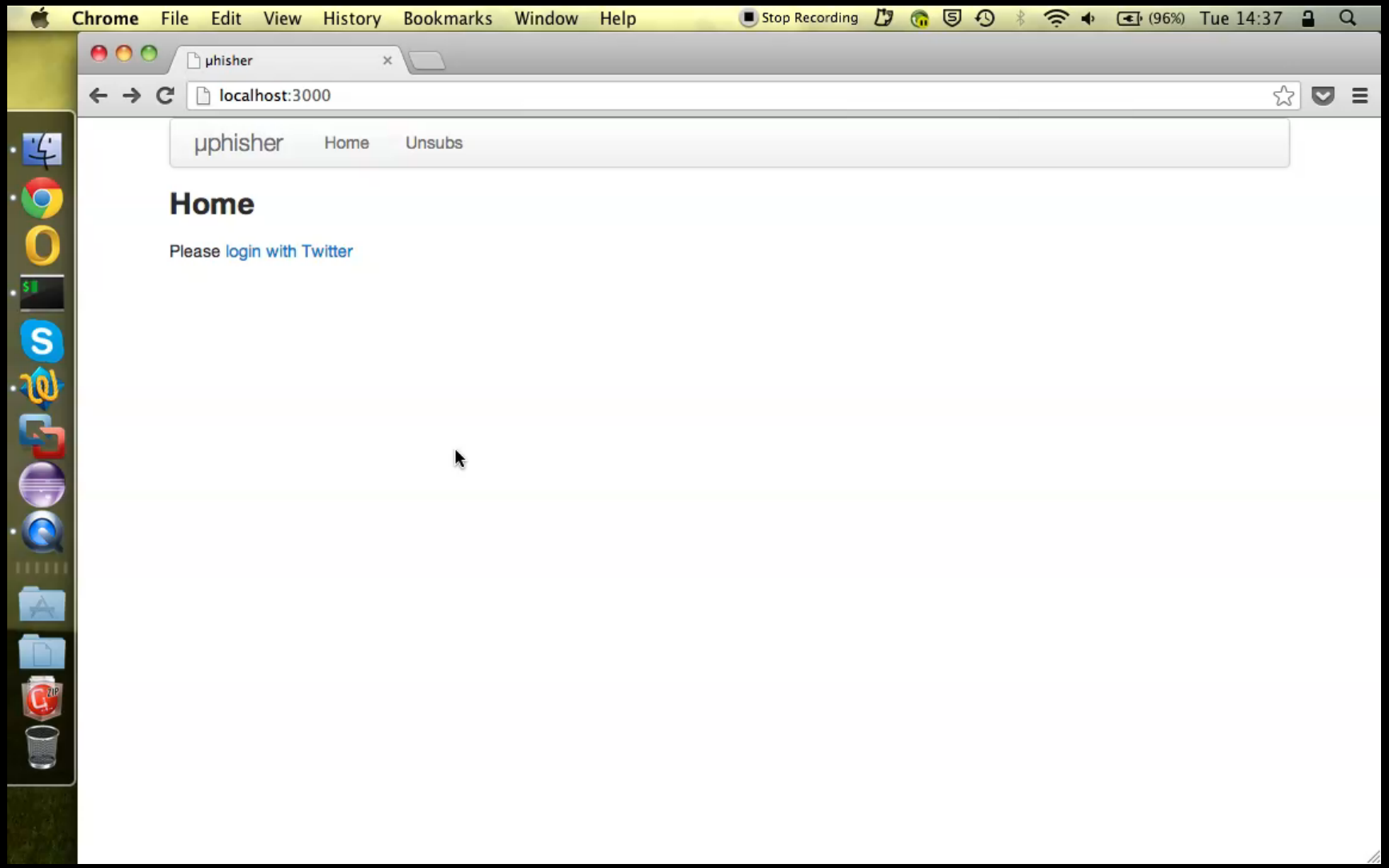
Reference implementation



Unsub Registration Demo



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Reference implementation

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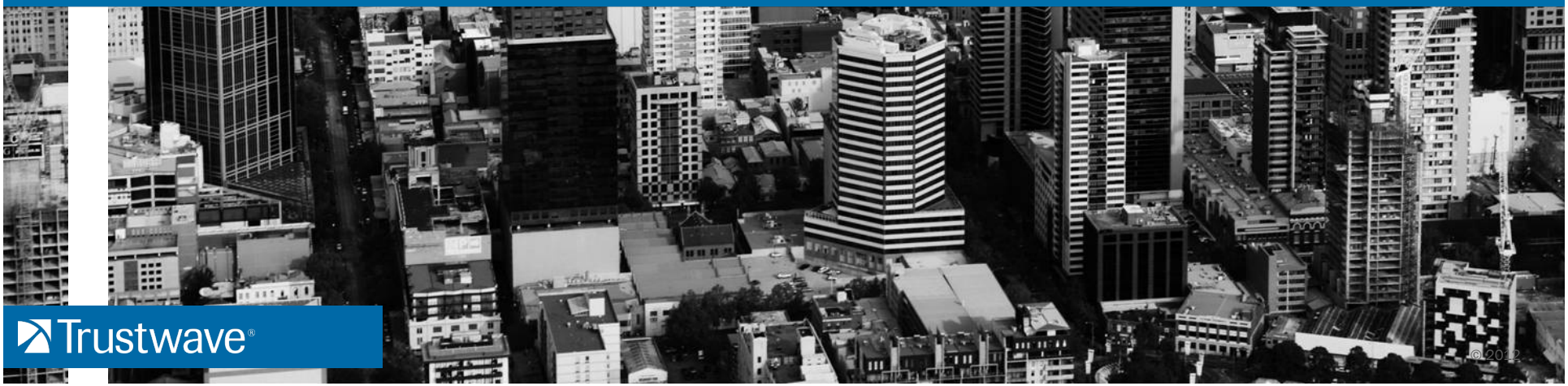
DEMO (FINGERS CROSSED)



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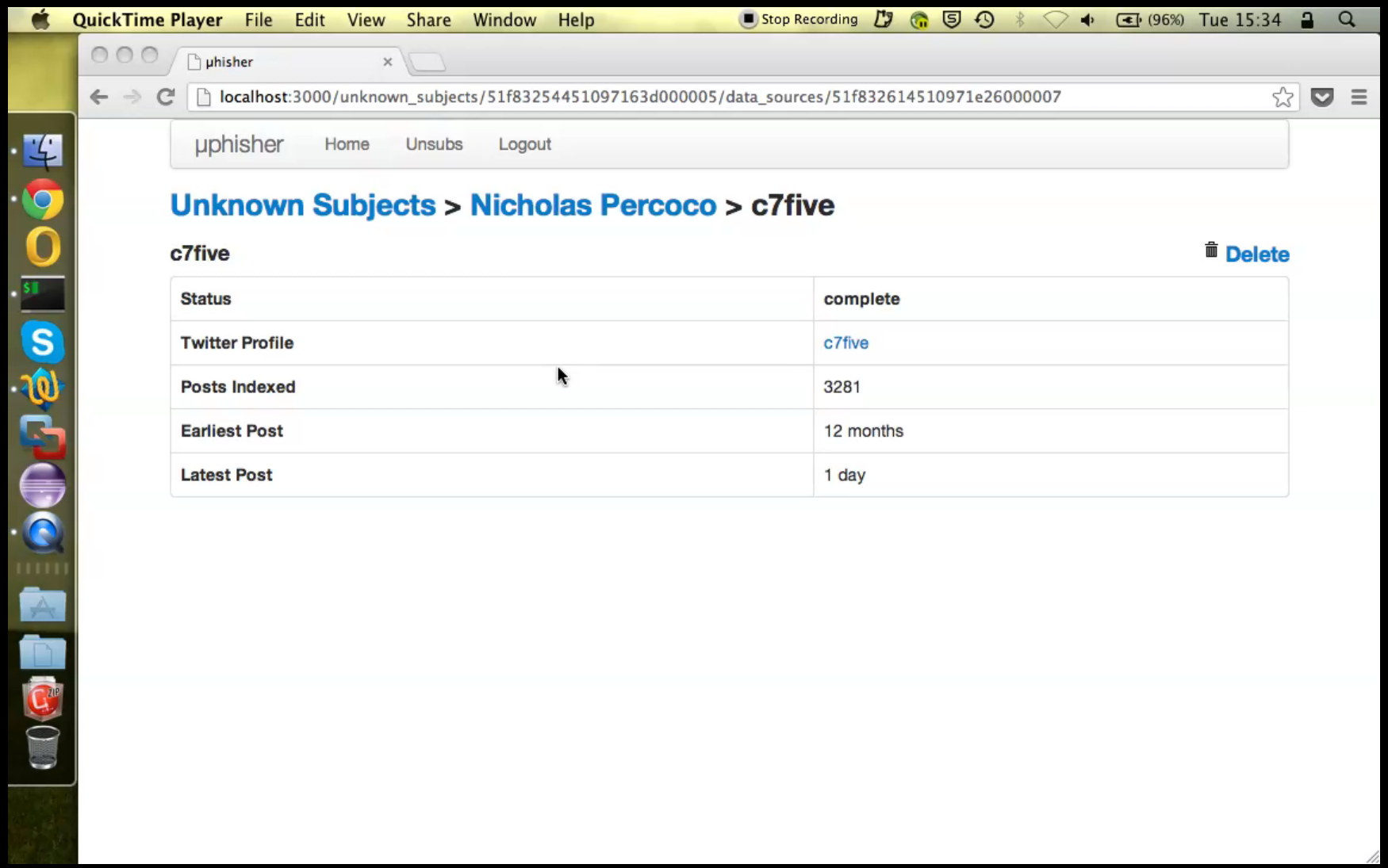
New Profile Demo



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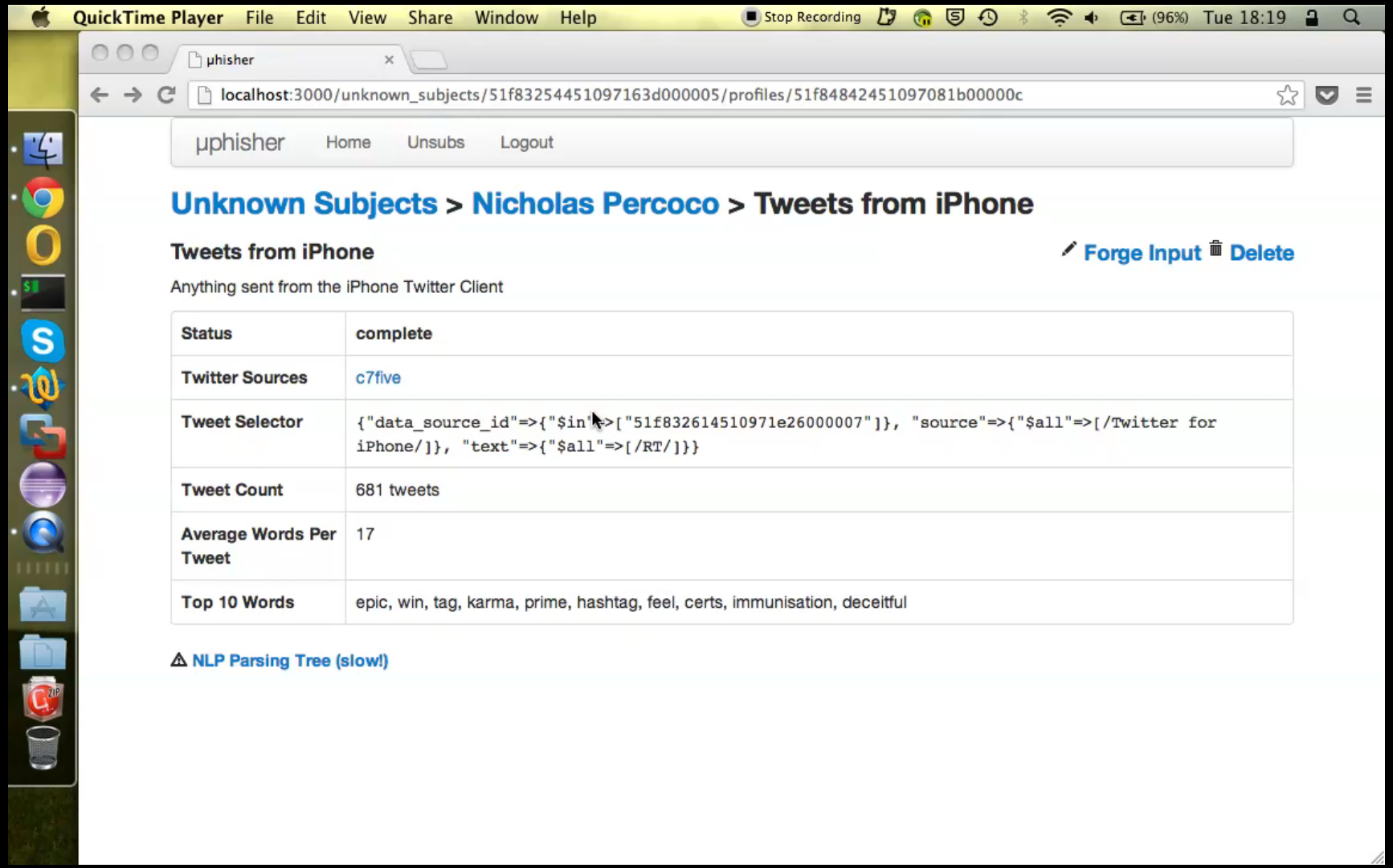
Assisted Input Demo



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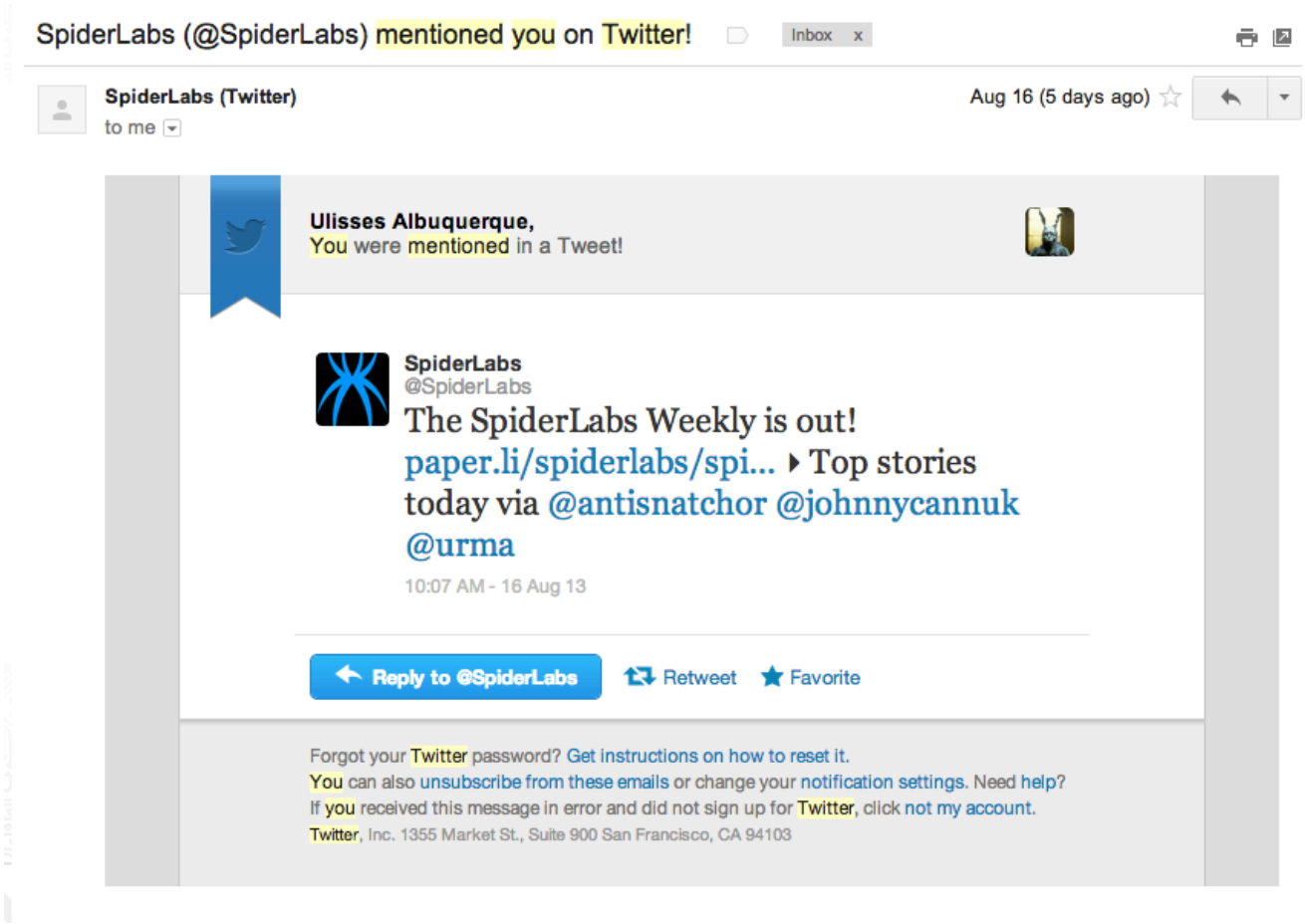
- How to use forged content?



Personal email screenshot

µphisher – Future Work

Coming Soon

- Support for additional data sources
- Topic clustering customized per data source
- More metrics and feedback for assisted input
- Usability (UX help very much needed)

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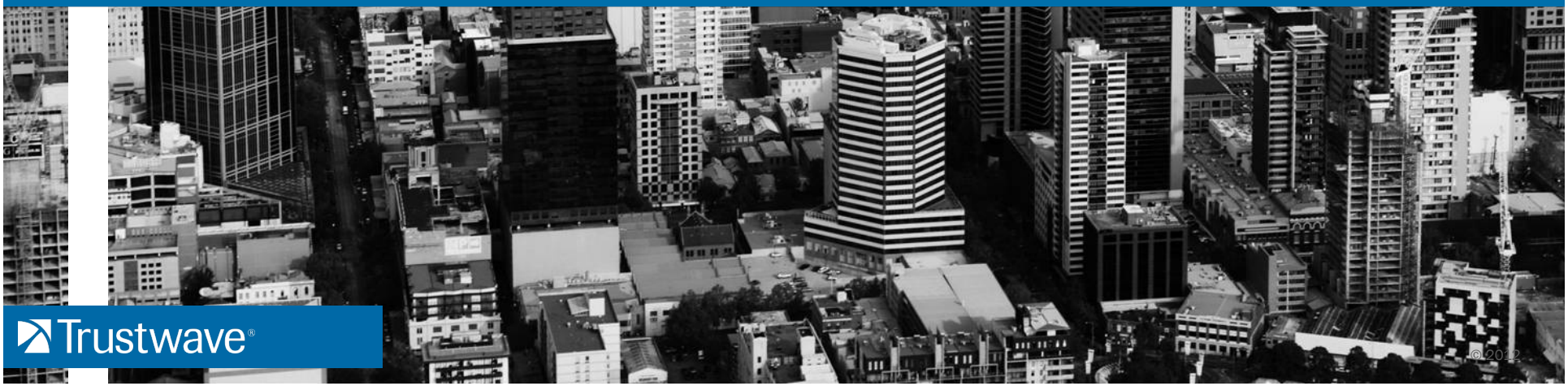
CONCLUSION



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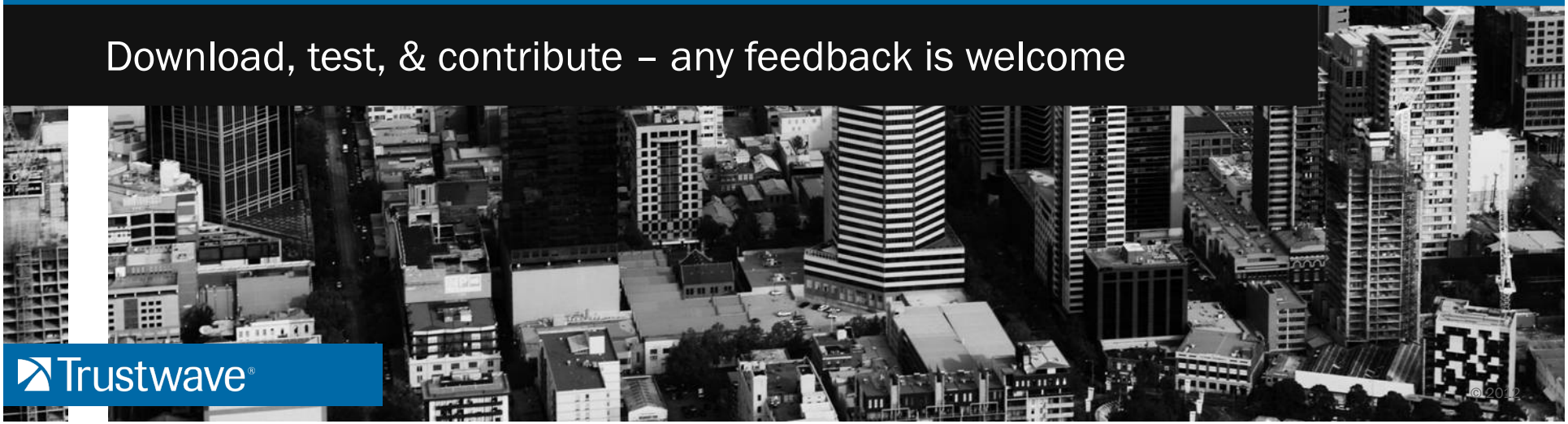
HTTPS://GITHUB.COM/URMA/MICROPHISHER

Download, test, & contribute – any feedback is welcome



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Thank You!

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