

Stranger Danger

Mohamed Saher, Nikita Tarakanov, Ahmed Garhy

27th April, 2017

OPCDE

Dubai, UAE

Agenda

- Intro
- The Application
- Idea of Research
- Our Platform
- Results
- Demo
- Future Work
- Conclusion
- Q/A

Introduction

- Dangerous world of social dating networks
- Exposing too much self-information
- Problems with privacy

Application

- Target: Tinder
- Simple application (swipe right/left, 6 pictures and bio)
- More than 50 millions profiles
- Various platforms supported: Android, iOS
- Helps in matching people together

Idea of Research

- Explore internals of application/network
- Privacy issues
- Security issues
- Psychological Research

Our Platform

- Goals
 - Works on PC
 - Stability
 - Versatile
 - Automation
 - Statistical modelling (gender, interests, geo-location, etc)

Platform: internals

- Facebook <-> Tinder
- Basics of tinder protocol (JSON)
- Auto-Swiping
- Geo-location reveal
- Chatbot implementation (simple chains)
- Whatsapp chatbot

Facebook <-> Tinder

- Token is obtained first to be used in future requests
- e.g.
[https://www.facebook.com/v2.6/dialog/oauth?redirect_uri=fb464891386855067%3A%2F%2Fauthorize%2F&state=%7B%22challenge%22%3A%22q1WMwhvSfbWHvd8xz5PT6lk6eoA%253D%22%2C%22auth_logger_id%22%3A%2254783C22-558A-4E54-A1EE-BB9E357CC11F%22%2C%22com.facebook.sdk_client_state%22%3Atrue%2C%22method%22%3A%22sfvc_auth%22%7D&scope=user_birthday%2Cuser_photos%2Cuser_education_history%2Cemail%2Cuser_relationship_details%2Cuser_friends%2Cuser_work_history%2Cuser_likes&response_type=token%2Csigned_request&default_audience=friends&return_scopes=true&auth_type=rerequest&client_id=464891386855067&ret=login&sdk=ios&logger_id=54783C22-558A-4E54-A1EE-BB9E357CC11F#_ =](https://www.facebook.com/v2.6/dialog/oauth?redirect_uri=fb464891386855067%3A%2F%2Fauthorize%2F&state=%7B%22challenge%22%3A%22q1WMwhvSfbWHvd8xz5PT6lk6eoA%253D%22%2C%22auth_logger_id%22%3A%2254783C22-558A-4E54-A1EE-BB9E357CC11F%22%2C%22com.facebook.sdk_client_state%22%3Atrue%2C%22method%22%3A%22sfvc_auth%22%7D&scope=user_birthday%2Cuser_photos%2Cuser_education_history%2Cemail%2Cuser_relationship_details%2Cuser_friends%2Cuser_work_history%2Cuser_likes&response_type=token%2Csigned_request&default_audience=friends&return_scopes=true&auth_type=rerequest&client_id=464891386855067&ret=login&sdk=ios&logger_id=54783C22-558A-4E54-A1EE-BB9E357CC11F#_=)

Basics of Tinder Protocol

- X-Auth-Token: A UUID4 format authentication token obtained via the “/auth” api endpoint
- Content type: application/json
- app_version: 3
- Platform: ios
- User-agent: User-Agent: Tinder/3.0.4 (iPhone; iOS 7.1; Scale/2.00)
- os_version: 700001

Auto-Swiping

- Swiping is automated using the like/pass action request using the remote id of the user
- e.g. `curl https://api.gotinder.com/{like|pass}/{_id}`

Geo-Location Reveal

- Tinder only gives you distance between people
- How to get geo-location of remote user?
- Azimuth = $180^{\circ}07'54''$

Automated Chatbot

- Automated chatting scripting via external XML file is used to make chatting generic in various languages as well

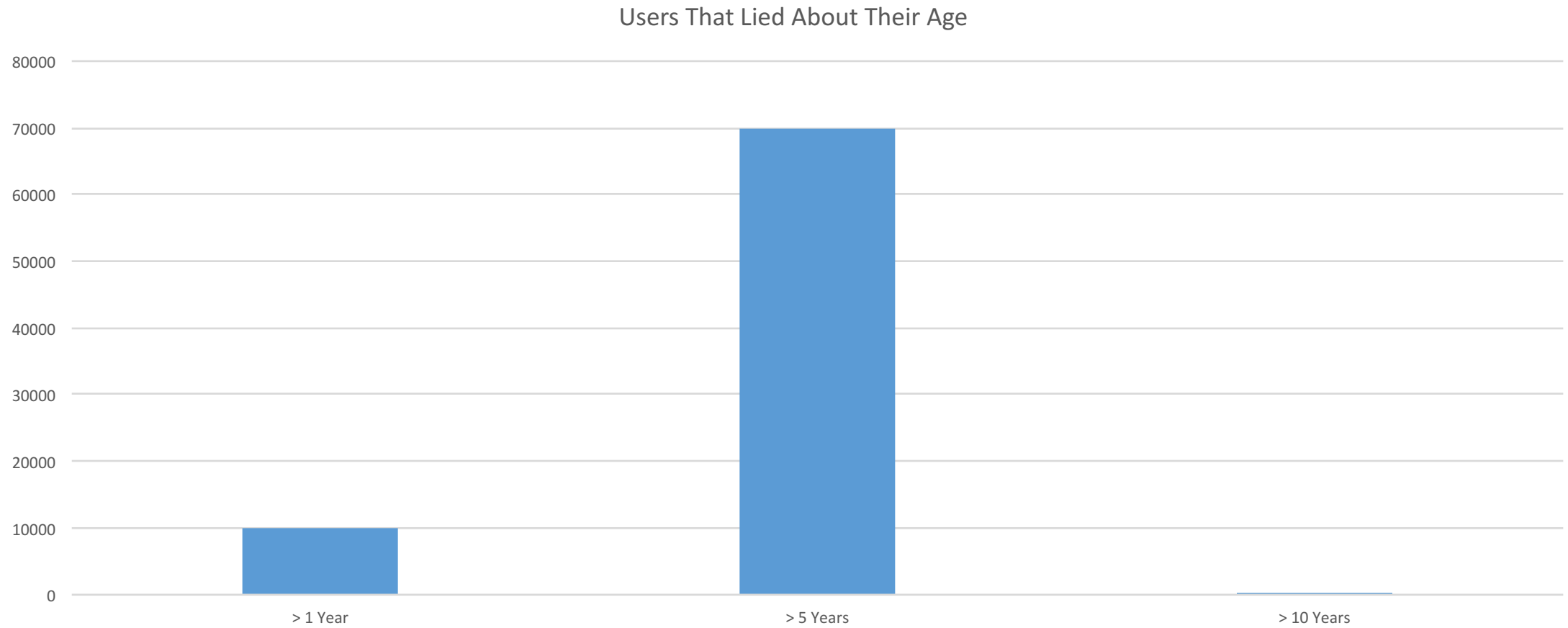
Automated WhatsApp Chatbot

- Automated chatting via whatsapp if phone number is available to retrieve more information about the user.

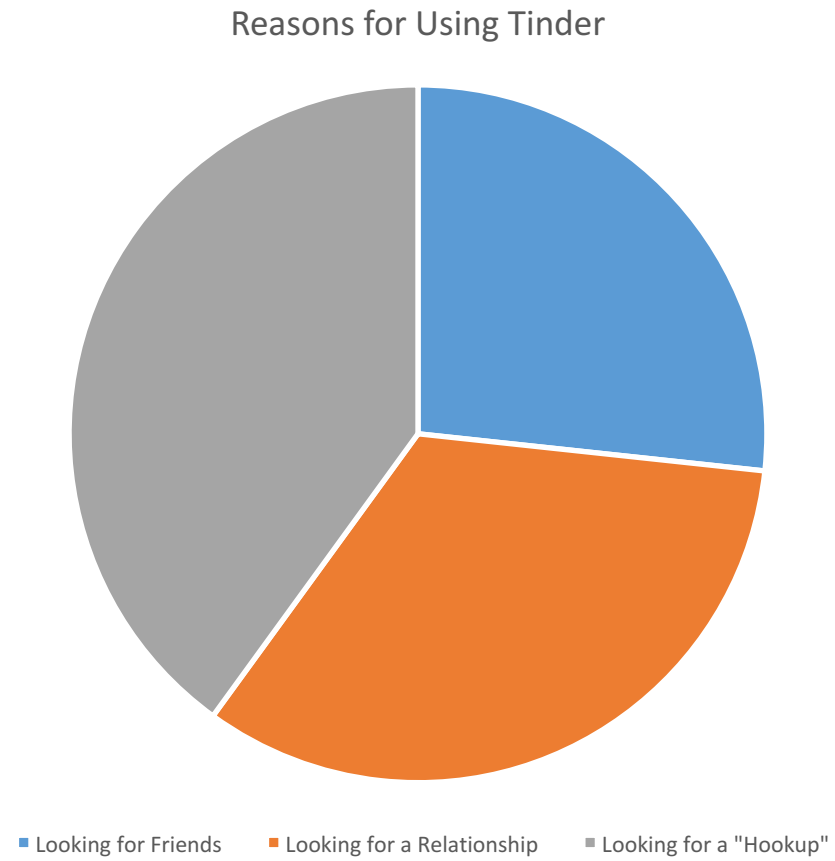
Results

- Tinder is mostly misused by people
- Tinder also is considered as a SPY application and not just for making friends
- Tinder also attracts sexual predators to exploit other members

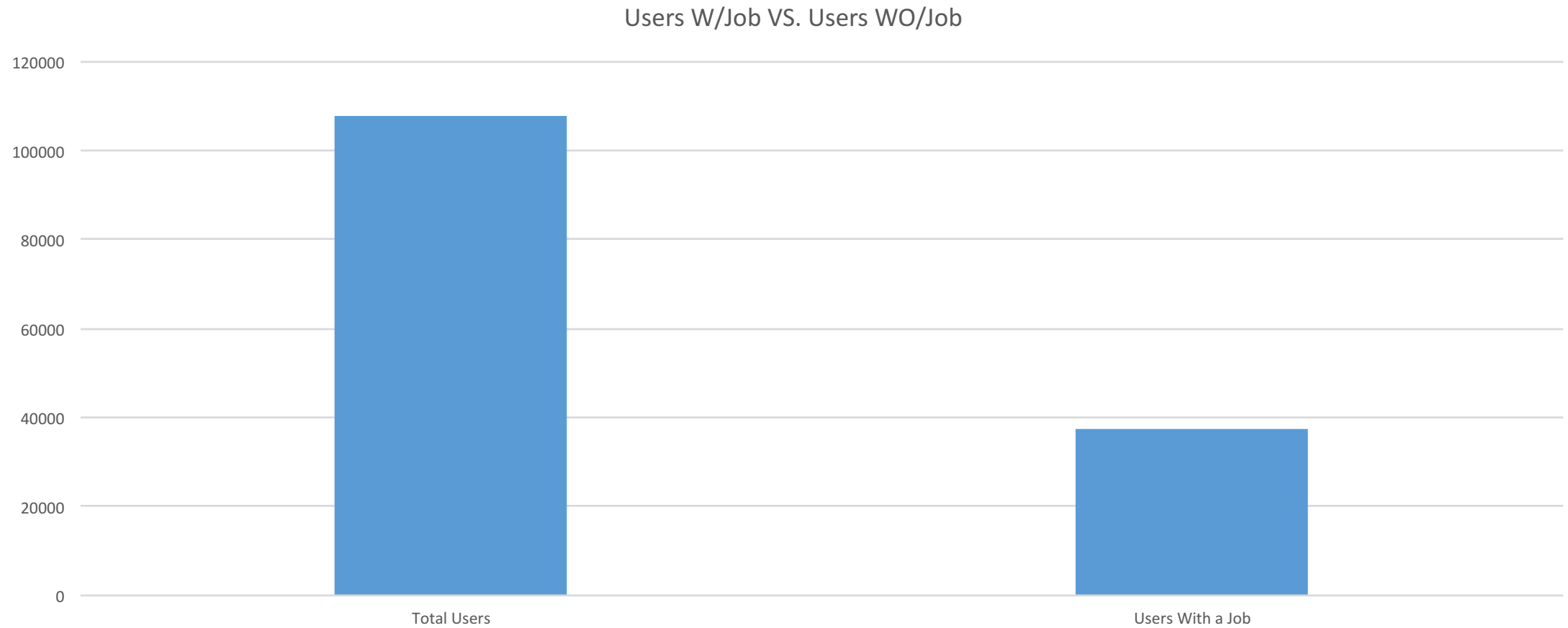
Results



Results

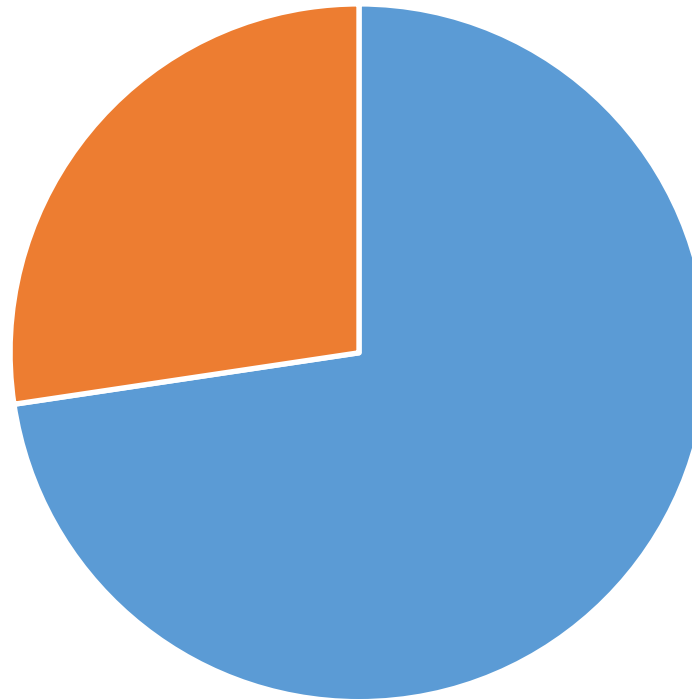


Results



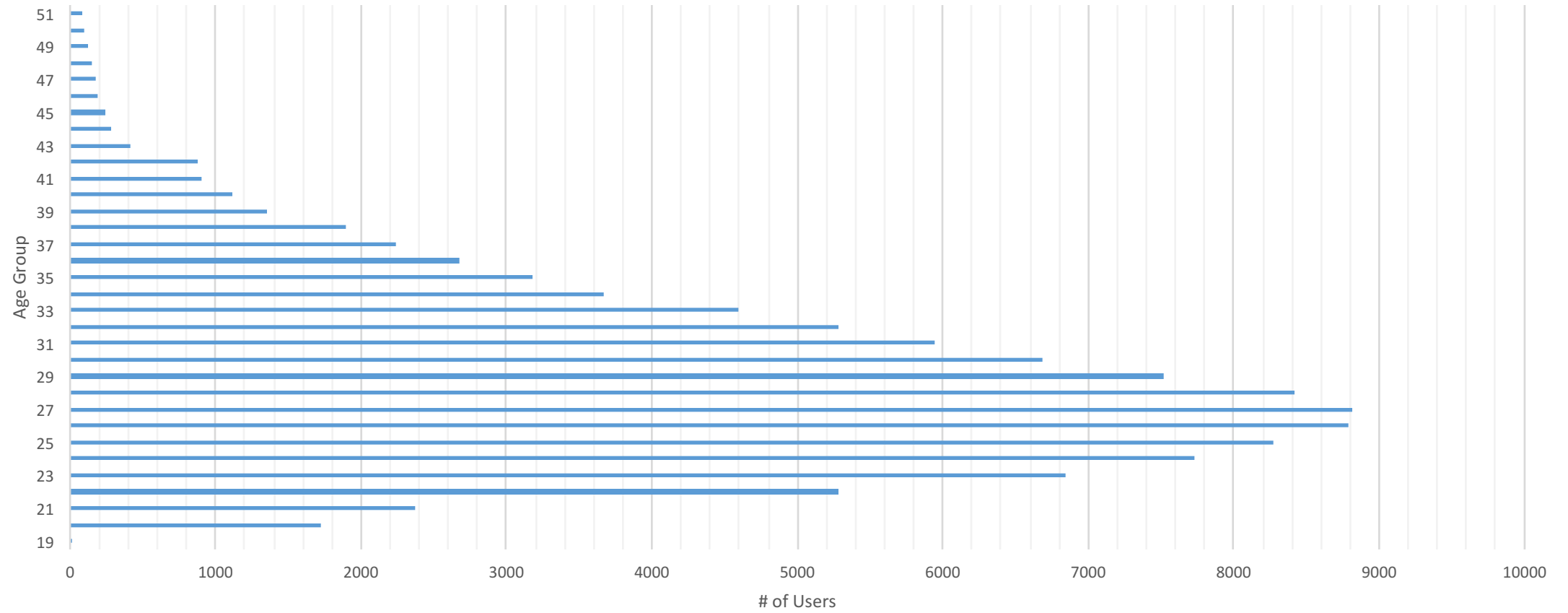
Results

Users W/Higher Education VS. Users WO/Higher Education



■ Total Users ■ Users with Higher Education

Results



Demo

Future Work

- Tinder is one of various dating application for social networking, we intend to extend the research to cover other applications such as Badoo, Bumble, OkCupid and so forth.
- More statistical understanding of usage per culture and not geo-locations.
- More social experiments exposing various kinds of usage and misuse of social dating applications

Conclusion

- Tinder is misused widely
- Tinder is not privacy safe
- Tinder is not geo-location safe
- What you see is **NOT** what you get

Q/A

- What's on your mind?