Smart Campus

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ABSTRACT

We evaluate the feasibility of using Facebook data to enhance the effectiveness of a recruitment system, especially for résumé verification and recognize the personality by using social network analysis methods. In the industries employee's personality is very important in the workplace which will help to growth of the company and give more good service to the client. Currently resume verification is based on trustful third parties who does background verification. Based on this report is sent to the company who is hiring the employee decides to keep employee or not. This manual system usually takes lots of time and this system generally wont display candidates' nature towards society (in short how he behaves in society weather he posts something wrong on social media in simple words his/her personality). Social media now a days is huge platform where user generally spends too much time on social media like Facebook, LinkedIn etc. like posting a page, commenting, liking the post, certification uploading, adding friends. We are going to design such a system that verifies genuineness of user by scraping or exploring data from Facebook or LinkedIn or both. we are exploring post of person and classifies it into is it technology related, violence related and many more what are the comments he gives on his post how he reacts his language of handling a query will be parsed and classified using machine learning algorithm of previously trained dataset using SVM. And at the end we will show this information to the company to make their own decision based on this result.

Keywords : SVM, Social Network Analysis, SNA, SNS

I. INTRODUCTION

Social network services (SNSs) are used to record events in our lives. In 2013, more than 1.5 billion users interacted on Facebook which is one of the most famous SNSs. These accumulated SNS records are unintended and long-term data that may reflect a person's experiences.

We focused on the possibility that output results of SNA data could be used to evaluate job applicants. More than 90% of companies now use SNS data to evaluate applicants. Companies consider SNS data as an important source of verification because firms can find an applicant's true qualities from daily life logs on SNS. The problem with evaluating SNS data to evaluate applicants is that companies do it manually.

This is a huge task because of its time consumption, high cost, and subjective evaluation process.

Some studies show the possibility of using SNS data for applicant screening. For example, people can get recommendations based on their SNS information, and the company can use SNS data to learn more about candidates. Five features that are typically used during the employment process in the U.S. can be retrieved from SNSs. Yet this research shows a limit that only use posted text, not network data of SNSs. Those studies did not use network data from SNS that seems to be very important feature for an employment.

Many researchers have focused on social network analysis (SNA) to study the effects of SNSs. Media communication and social science fields are strongly interested in SNS. Because Facebook stores a huge amount of data, computer science has also studied it. Due to their technological contributions, various SNA applications have been developed to extract meaning from the data.

Discovering groups, as known as community detection, has researched by various researchers in numerous fields of study. Methods of clustering could be divided into four approaches in general: Graph partitioning, hierarchical clustering, partitioning clustering, and spectral clustering. Those approaches attempt to find numerical split boundaries by analysing structures of graphs.

One of the ways to distinguish communities, which our research approach, is using modularity. Basis idea for those approaches is communities could be detected on networks. Density of graphs in the network considered as important which distinguished by sparser from the connections of vertex. Detected communities show unique topic documents are gathered which corresponding to

every single member's interests. Modularity has used in empirical cases in real practices for social analysis due to its conveniences.

This research suggests a method to use SNS data to verify the résumé of job applicants. Peoples' naturally recorded life log data could be a useful source to confirm each person's experiences. Our main objective is: detected community information from a subjects' Facebook data will be matched with described experience from a subjects' résumé.

To examine this method for general user cases, we assessed the hypotheses: a recall rate will be offering based on subjects' using pattern of Facebook. Experiments were conducted to learn a way to adopt social network data to evaluate job applicants: two objectives were suggested. We gathered network data from Facebook and tried to verify some experiences of job applicants that they described in their résumés. Outputs of the experiment were measured as recall rate. We compared the recall rate by groups of subjects in styles of SNS usages to see how recall rate was affected by characteristics of SNS users.

II. PROBLEM DEFINATION

Currently in an organization the HR department asks for the resume from the candidate or hire the third-party client for recruitment and verification of the candidate. In this manual process there are chances of errors and false resume can be submitted and due to which a wrong candidate will be hired in the company. The skills mentioned in the resume are also not verified and a fake skill in resume can be added which will lead to a wrong candidate hiring. No guarantee of any trustful verification. and it takes huge time I contacting user, home and police. User who are migrated face many issues in this verification process while applying job. Company needs to pay for verification process which involves third party

verification which gives remarks on paper. After doing all these things also not getting proper information from manual system. We cannot trust on applicant as well. User generally actives on social media user presence on social media not displayed by this system anywhere.

III. AIM AND OBJECTIVE

The aim of this project is to provide application for companies for background verification and recognize the personality. In background verification our application will help to recruiter verify the employee and his/her personality. For recognize the personality we will fetch the posts and other helpful information from the social media network and using machine learning algorithm we get our result. Also, we will take a small test as per result we will apply machine learning algorithm and detect the employee's skills which is helpful for job recommendation.

- The method to use social networking sites data to fetch the applicant's post information.
- Fetch applicant's data from social media network for getting skills.
- Detect applicant social activity information from Facebook data like post about certification about to learn technology these data will be matched with described skills from a resume.

IV. LITERATURE SURVEY

1. Digital Media Marketing using Trend Analysis on Social Media

Author: Harsh Namdev Bhor, Rajat Malviya, Tushar Koul, Karan Mundra

Problem: The problem now there is no any personalize engagement between marketers and clients.

Solution: to provide such data by Personal Engagement by providing a deep insight into the user's' content and thus would generate quality data resulting in better customer base, high conversion and lower bounce rates.

Result: Digital Media Marketing using trend analysis would help digital marketers, firms or freelancers to have a personalize engagement with the customer base and help them to generate a much more insight full marketing campaign rather than just wasting money without any reliable output.

2. Personality Prediction System from Facebook Users

Author: Tommy Tandera, Hendro, Derwin Suhartono*, Rini Wongso, and Yen Lina Prasetio

Problem: Previous researches used old machine learning algorithm which is not that much accurate result and performance

Solution: The solution is attempt to build a system that can predict a person's personality based on Facebook user information.

Result: deep learning can improve the accuracy even if the accuracy is still quite low for some traits.

3. Behaviour Profiling of Reactions in Facebook Posts for Anomaly

Author: Savyan P. V., S. Mary Saira Bhanu

Problem: In social media network spreading fake news, sending spam messages, fake application and malicious activities are massive now a days which leads to huge financial and reputation loss.

Solution: The classification of reactions to the posts helps to identify the nature of the post with respect to the community opinion. In the case of Facebook, the various reactions to the posts can be in the form of comments to the posts or through smileys.

Result: An approach to classify the reactions to user posts, which in order supports to identify the community opinion to various posts of a user, and which further helps to identity the behaviour of user posts.

4. Analysing Real and Fake users in Facebook Network based on Emotions

Author: Mudasir Ahmad wani, Nancy Agarwal, Suraiya Jabin, Syed Zeeshan Hussain

Problem: In current situation on social media lot of fake user account which is most problems in the cyber world. Fake user does unlawful activity, and cybercriminal in cyber world.

Solution: fake profile detection model that incorporates sentiment-based attributes to differentiate real and fake OSN profiles. The study is grounded in the fact that the posts of real users reveal varied categories of emotions such as joy, sad, angry, fear, etc. based on their life experiences.

Result: a fake profile detection model which has been trained and tested on a sentiment-based feature set. The data is collected from the Facebook network with the help of an I macros-based crawler program.

V. REQUIREMENT ANALYSIS

Software Requirements

We will need the following software to accomplish our project.

- Operating System: Windows 10, Windows 7.
- Python.
- anaconda, Jupiter notebook, Spyder
- Back end: -MySQL, sqlyog
- Editor for writing code e.g., VSCode, Sublime Text

Hardware Requirements

We will need the following hardware to accomplish our project.

- Processor: Intel Core i3 or Core i5.
- RAM: 6GB or more.
- Hard disk: 500 GB or more.

I.PROJECT DESIGN

Methodology

This project we will develop using python and web technology. We will develop web application as a model within we will show our project as a model. For fetch the data from Facebook and LinkedIn we will use selenium which is automation tool. We can classify the Facebook fetched data using SVM algorithm. And we will apply DNN algorithm on the LinkedIn Fetched data. For detecting the user's skill, we will take small test and on the basis of result we will show the recommended skills which is useful for predicting the job profile.

In this system, we will verify the resume of the applicant's which will have to upload and will compare fetched data from social networking sites with described resume skills and experiences. For this purpose, we take the twitter's dataset and generates the model using machine learning algorithm. And after whatever we get skills from the Facebook and LinkedIn, we will these skills as an input and predict the result.

VI.FUNCTIONAL REQUIREMENT

In software engineering, a functional requirement defines a function of a software system or its component. A function is described as a set of inputs, the behavior, and outputs (see also software). Functional requirements may be calculations, technical details, data manipulation and processing and other specific functionality that define what a system is supposed to accomplish. Behavioural requirements describing all the cases where the system uses the functional requirements are captured in use cases. Functional requirements are supported by non-functional requirements (also known as quality requirements), which impose

constraints on the design or implementation (such as performance requirements, security, or reliability). Generally, functional requirements are expressed in the form "system must do <requirement>", while non-functional requirements are "system shall be <requirement>". The plan for implementing functional requirements is detailed in the system design. The plan for implementing non-functional requirements is detailed in the system architecture. As defined in requirements engineering, functional requirements specify particular results of a system. This should be contrasted with non-functional requirements which specify overall characteristics such as cost and reliability. Functional requirements drive the application architecture of a system, while non-functional requirements drive the technical architecture of a system.

VII. DESIGN AND IMPLEMENTATION

Model Generation
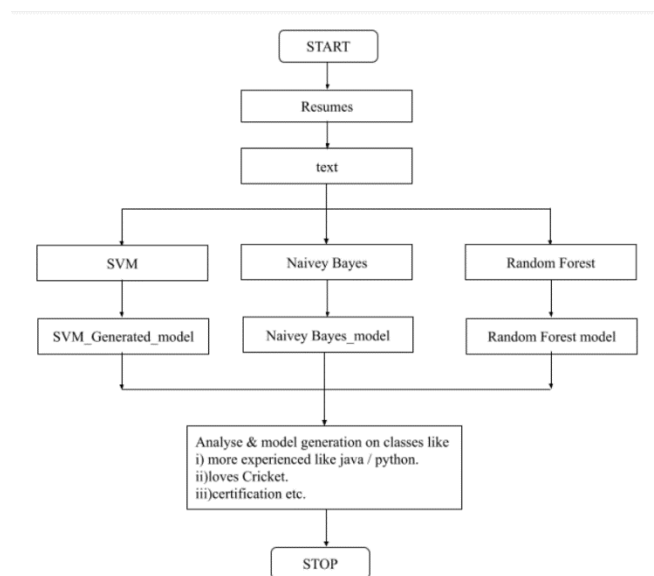
Figure 1: Model generation diagram

Flowchart
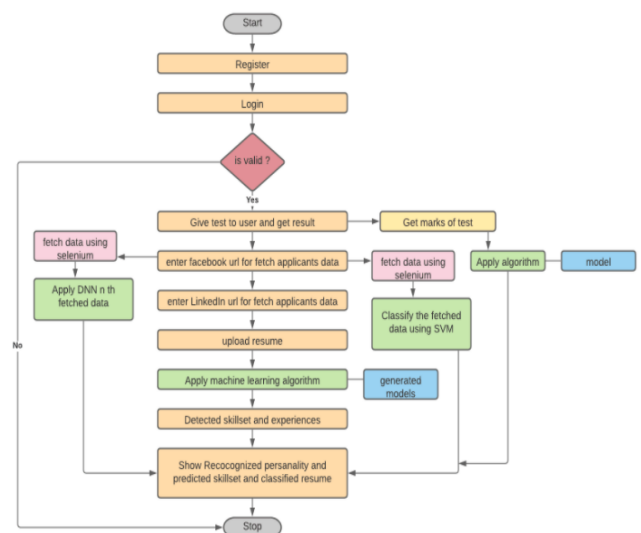
Figure 2: Flowchart

System Implementation

Implementation includes all those activities that take place to convert from the old system to the new. The old system consists of manual operations, which is operated in a very different manner from the proposed new system. A proper implementation is essential to provide a reliable system to meet the requirements of the organizations. An improper installation may affect the success of the computerized system.

Implementation Methods:

There are several methods for handling the implementation and the consequent conversion from the old to the new computerized system. The most secure method for conversion from the old system to the new system is to run the old and new system in parallel. In this approach, a person may operate in the manual older processing system as well as start operating the new computerized system. This method offers high security, because even if there is a flaw in the computerized system, we can depend upon the manual system. However, the cost for maintaining two systems in parallel is very high. This outweighs its benefits. Another commonly method is a direct cut over from the existing manual system to the

computerized system. The change may be within a week or within a day. There are no parallel activities. However, there is no remedy in case of a problem. This strategy requires careful planning. A working version of the system can also be implemented in one part of the organization and the personnel will be piloting the system and changes can be made as and when required. But this method is less preferable due to the loss of entirety of the system.

Implementation Plan:

The implementation plan includes a description of all the activities that must occur to implement the new system and to put it into operation. It identifies the personnel responsible for the activities and prepares a time chart for implementing the system. The implementation plan consists of the following steps.

- List all files required for implementation.
- Identify all data required to build new files during the implementation.
- List all new documents and procedures that go into the new system.

The implementation plan should anticipate possible problems and must be able to deal with them. The usual problems may be missing documents; mixed data formats between current and files, errors in data translation, missing data etc.

0-Level DFD
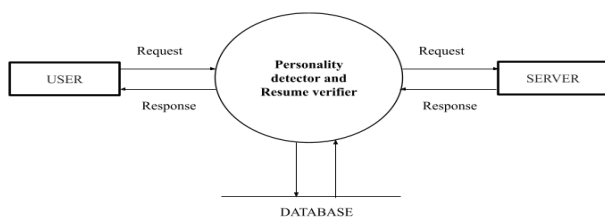
Figure 3: 0-level DFD

DFD Level-1
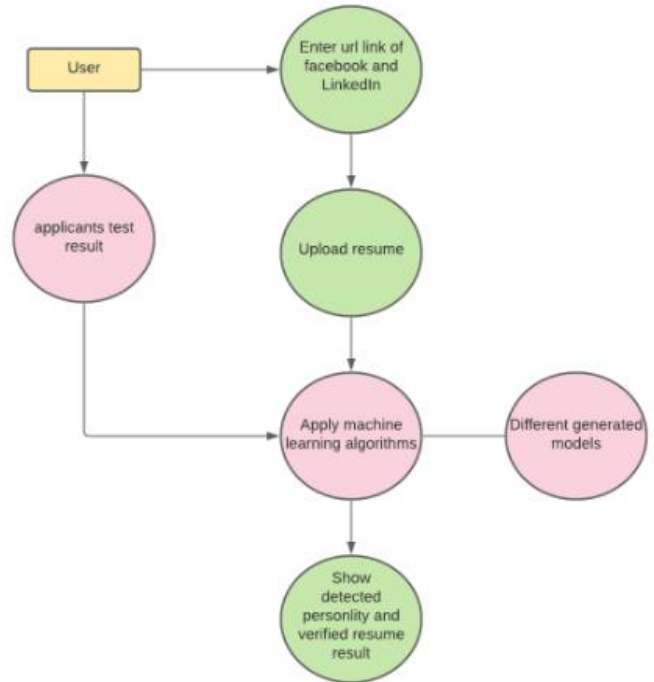
Figure 4: Level-1 DFD

DFD Level-2

Figure 5: Level-2 DFD

VIII.   Working Prototype and Output
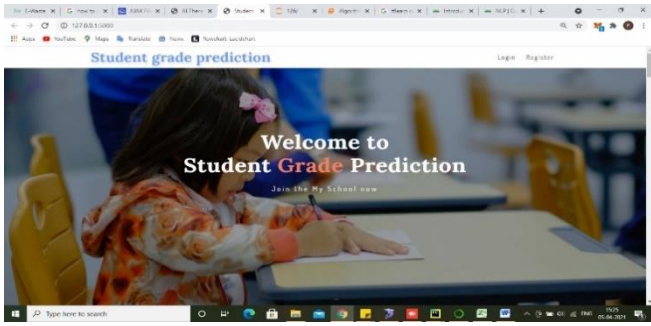
Figure 6: Welcome Page
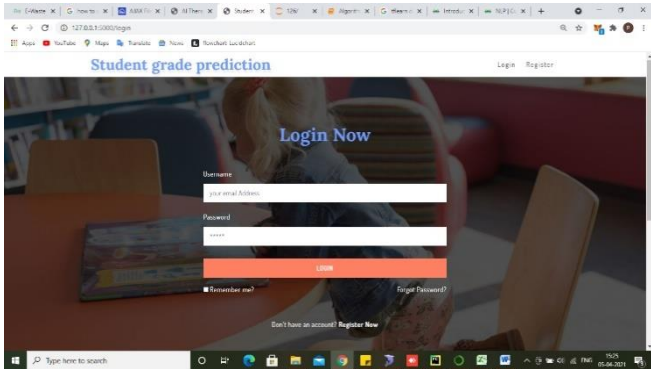
Figure 7: Login Page
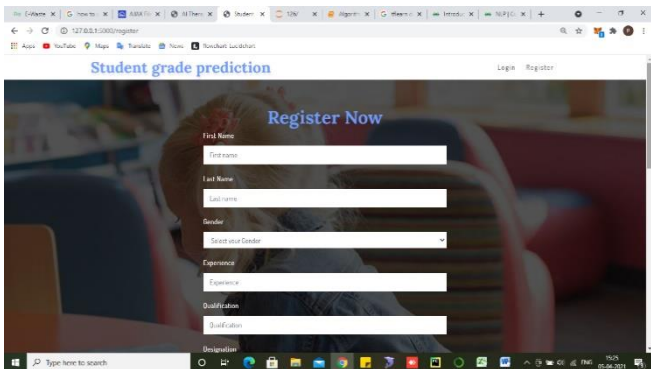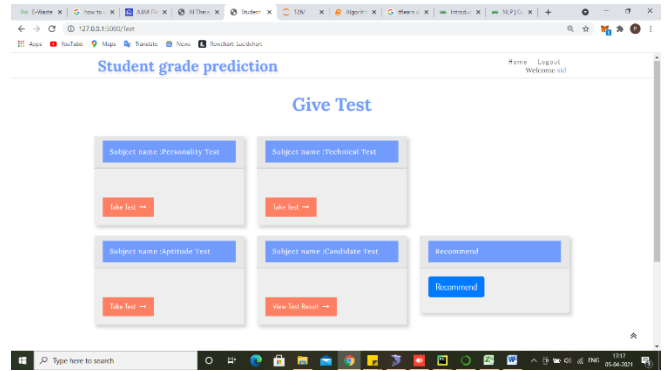

Figure 8: Registration Page
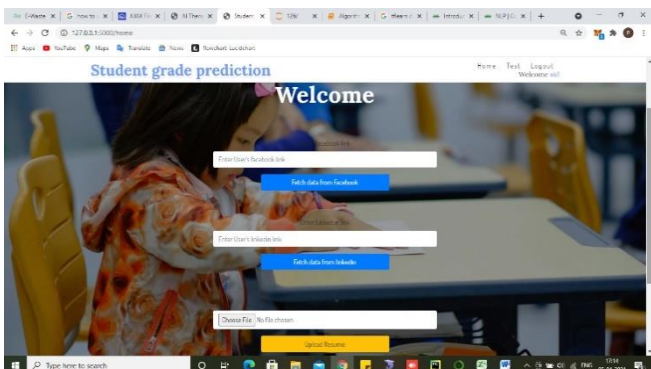
Figure 9: Profile Page

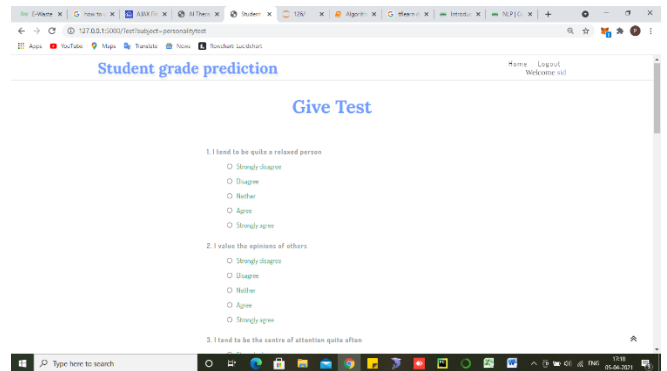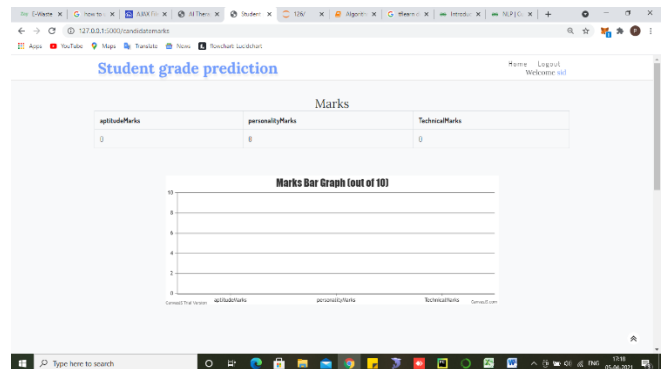
Figure 10: Welcome UI

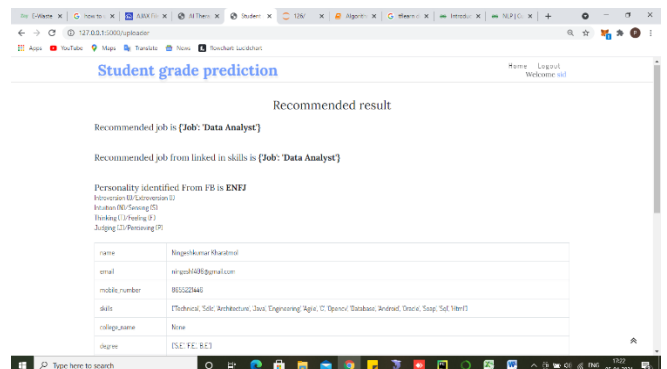Figure 11: Test Page

Figure 12: Prediction Page

Figure 13: Grading Page

IX. CONCLUSION

This project is a model to determine the Facebook/LinkedIn is appropriate data sources for evaluating job applicants. And also, this system will helpful for HR to get applicant skills on the basis of test. And will apply machine learning algorithms to predict the skills. User's degree of reflection between the real world and the Facebook world was measured by the users' way of developing friendship. This degree of reflection was an important factor when a company uses it for evaluating job applicants, although degree itself did not guarantee the usefulness of Facebook data. Further research should be conducted to examine this question.

X. FUTURE SCOPE

In future modification, we will use different machine learning algorithm will use for improve accuracy of the result. For verify resume add more different methods for comparing the skill which will help for getting more accurate result. Also compare result with other algorithm and use best algorithm in System. Currently, no dominant service or devices can represent the users' real life. Facebook and Smartphone seemed the best alternatives at this moment. This research tried to evaluate the possibility that naturally- accumulated data could be used within a certain context. Facebook data could be processed in an employment perspective if a company wants to use it. This study presents a baseline for further research into whether to use other data sources if available.

XI. ACKNOWLEDGEMENT

XII. REFERENCES

[1]. J. Staiano, B. Lepri, N. Aharony, F. Pianesi, N. Sebe, and A. Pentland, "Friends don't lie: Inferring personality traits from social network structure," in Proc. ACM Conf. Ubiquitous Comput., 2012, pp. 321330.

[2]. J. W. Pennebaker, R. L. Boyd, K. Jordan, and K. Blackburn, "The development and psychometric properties of LIWC2015," Tech. Rep., 2015.

[3]. S. Argamon, S. Dhawle, M. Koppel, and J. Pennebaker, "Lexical predictors of personality type," Tech. Rep., 2005.

[4]. R. R. McCrae and P. T. Costa, "Personality, coping, and coping effectiveness in an adult

sample," J. Pers., vol. 54, no. 2, pp. 385404, 1986.

[5]. B. R. Karney and T. N. Bradbury, "The longitudinal course of marital quality and stability: A review of theory, method, and research," Psychol. Bull., vol. 118, no. 1, pp. 334, 1995.

[6]. P. T. Costa and R. R. McCrae, "Normal personality assessment in clinical practice: The NEO personality inventory," Psychol. Assessment, vol. 4, no. 1, pp. 513, 1992.

[7]. S. Adali and J. Golbeck, "Predicting personality with social behavior,"in Proc. IEEE/ACM Int. Conf. Adv. Social Netw. Anal. Mining (ASONAM), Aug. 2012, pp. 302309.

[8]. O. P. John and S. Srivastava, "The big ve trait taxonomy: History, measurement, and theoretical perspectives," Handbook of Personality: Theory and Research, vol. 2. 1999, pp. 102138.

[9]. S. D. Gosling, A. A. Augustine, S. Vazire, N. Holtzman, and S. Gaddis, "Manifestations of personality in online social networks: Selfreported Facebook-related behaviors and observable prole information," Cyberpsychol., Behav., Social Netw., vol. 14, no. 9, pp. 483488, 2011.

[10]. H. Davis et al., in Proc. 3rd ACM Web Sci. Conf. (WebSci), Paris, France, 2013.