

Employability Prediction Based on Personality Traits and Cognitive Analysis obtained from Social Media Profiles

Synopsis

**Bachelor of Technology
Computer Science and Engineering**

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1. Problem Definition

The hiring process of organizations, regardless of scale, remains a topic of extreme debate and discussion. Accurately understanding ‘employability, or for that matter, what makes an individual ‘employable’ is still a daunting task. Even with online resumes, profile links, virtual interviews and take-home assignments, the hiring mechanism still remains a process that is fundamentally inefficient and prone to severe errors in judgment. This project aims to reduce the search space and ease the process of hiring by introducing an aid in the form of a prediction tool.

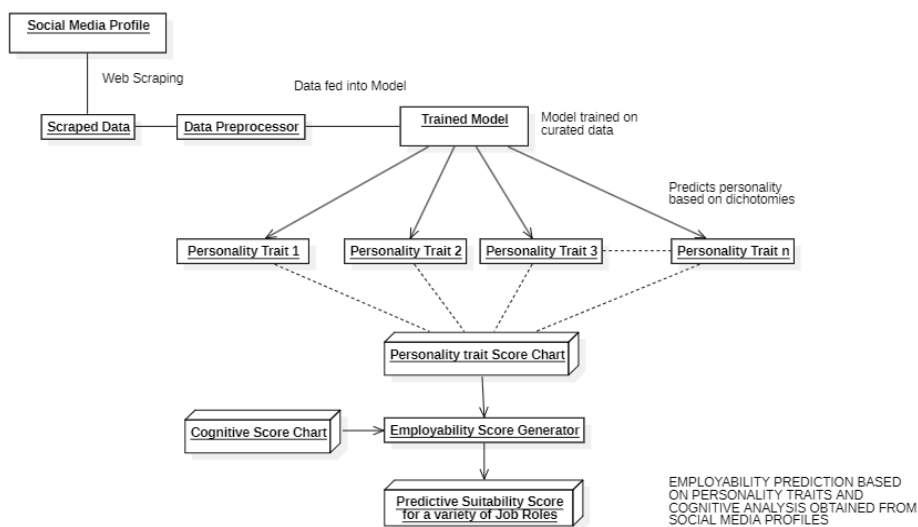
2. Problem Domain

The proposed solution will function in the domain of **Web Development** and **Machine Learning** because we intend to devise the end-product as a software tool using which employers can perform easy and efficient employability analysis by simply using the social media profile links of target individuals. A detailed **hiring metric** based on personality traits and cognitive abilities will be devised using which we will be able to map an individual to a certain type and in turn, his/her predictive suitability for a certain job role.

3. Background

In recent times the idea of personality prediction from user’s social media posts have been of much interest [1] [2]. Many classification schemes such as Big 5 [1] [2] , MBTI [3] have been used for this purpose. Research on similar subjects has found, one’s personality has a significant impact on their job engagement [4] [5]. The results from these studies provided evidence that one needs to consider people’s personality preferences when developing the employability qualities that are needed in order to sustain their employability in a changing employment and occupational world [5].

4. Probable Solutions



- The process of determining employability or predicting cognitive levels will often involve identifying an individual's personality type. The goal will be to classify personality traits using models like the Big 5 and MBTI.
- Social media posts will be analyzed to classify these traits. An extension will be used to capture posts from a person's Facebook profile while browsing.
- The post collection process will be automated using browser automation tools like Selenium or Puppeteer in the future.
- Collected posts will be passed to a model trained on sample data to predict personality traits. A dictionary will be initialized to store trained models.
- The proposed solution will be implemented as a Software-as-a-Service (SaaS) tool. Employers will be able to perform easy and efficient employability analysis using the social media profile links of target individuals.
- A detailed hiring metric based on personality traits and cognitive abilities will be devised to enable individuals to be mapped to certain job roles based on their predictive suitability.

5. Project Benefits

- The tool will help career counsellors and students make more informed decisions w.r.t career choices.
- It will help employers generate better hires in general and introduce more specificity in the hiring process.
- The model or the hiring metric could be used as a stand-alone product to fine tune the tool for different job roles, skill sets and different hiring use cases.
- Since personality and cognitive skills are both parameters that can be studied over a long duration, we can leverage these tools to channelize efforts and/or provide appropriate training programmes for students and working professionals.

6. Conclusion

While the Employability prediction tool is a direct aid for students, working professionals, employers and career counselors. The model and hiring metric are separate deliverables that can be used for varying tasks. Overall, the project aims to reduce the hiring search space, make more specific hires for target job roles, reduce the manpower needed for entry level hiring and ensure that the hires made are better in general and more oriented towards the organization's work culture.

7. References

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