Algorithms and Optimisation for Big Data (CSE511)
Request for Proposal

Vidish Joshi
AU1841019
joshi.b@ahduni.edu.in

ABSTRACT

Match-making system to create balanced teams from participants.

1 INTRODUCTION

This exercise aims at creating a team-member matchmaking system that helps create project teams from a pool of candidates to create an optimal strategy or a system of dividing players into teams of equal sizes.

2 INITIAL THOUGHTS

The first approach that comes to mind when trying to solve the problem of creating such system is to sort and divide the candidates based on their personality traits, intellectual ability and practical knowledge. This method is seen to be implemented in most matchmaking system referenced while researching for this project.

3 PROOF OF CONCEPT

The theory that we can match people based on their traits has been widely tested and implemented on industrial scale as well. Some of the famous proofs of this theory is the algorithms implemented by dating websites *Tinder* and *OkCupid* or social media platforms such as *Facebook* or *Instagram*. Although these algorithms are a bit extensive for this project, it does provide us with valid instances of matchmaking apps based on people's traits.

We can also refer to this article where the author has developed a tool to match 2 people with each other based on their personality and interests. The implemented work can be found here.

Additionally, these approaches need not be necessarily ML based. The algorithms employed by the above mentioned products are ML based but they have hard coded matching algorithms components as well. Once such example is found in the documentation for matching gaming players against each other by *Gameparks* here. They employ a "non ML" based algorithm, so to speak, that simply iterates through the players and finds suitable match based on their performances and set thresholds.

Again, despite being a bit extensive, this approach gives important validation to the idea that a reliable tool to divide candidates into teams can be made based upon their traits.

4 DATA & TECHNICAL REQUIREMENTS

Although a couple of data-sets have been found, but they do not necessarily pertain to solving the problem of creating teams for a project. The variables/traits considered are not suitable for this implementation. So one of the tasks would be to decide precisely on the variables required and collect suitable data to test the system.

As for the technological requirements for coding, *Python* programming language along with required libraries have been decided as of now to create a console based system.