

# Scrutinising Artificial Intelligence based Career Guidance and Counselling Systems: an Appraisal

<sup>1</sup>Tehseen Mehraj, <sup>2</sup>Asifa Mehraj Baba

<sup>1, 2</sup>Department of Electronics & Communication Engineering

<sup>1, 2</sup>Islamic University of Science & Technology, Awantipora, India

---

**Abstract:** The proliferation in automation and digitization of work have substantial impact in shaping the nature of career counselling, career development and career choices. With increasing change in occupations, more number of individuals are confronted with acquainting themselves with upcoming industries and occupations. Career experts play a significant role in assisting people to evaluate, obtain and infer these changes while helping them in appropriate career selection and planning. The career guidance and counselling is in its initial stages in India and the conventional manual method being employed proves to be inefficient and ineffective. Automation of career guidance and counselling process with the help of intelligent computer-aided solutions have considerable potential and will be of greater importance. Besides, simplifying task and saving effort as well as time, an automated solution has substantial capability to engage and reach, larger diverse group of people. In this paper, contemplation of numerous Artificial Intelligence (AI) based schemes offered in the field of career guidance and counselling has been performed. This paper begins with prominence of career guidance and counselling followed by scrutinizing the scope of various technologies in contributing a solution. Besides, extensive work performed in this field has been critically surveyed. Ultimately, the challenges and open problems were implications from the conducted survey. The paper identifies directions for potential research in this domain, hoping to drive attention of research community.

**Keywords:** Artificial Neural Networks, Career Counselling, Career Guidance, Expert System.

---

## I. INTRODUCTION

Numerous challenges are affecting career experiences of youth such as advancement in technology, variations in economy, globalisation, and worldwide competitive-education market. Further, education sector has been confronted with abrupt increase in student diversity and number followed by changing attitudes of youth [1], [2]. At present, the uncertainty among youth regarding their career is a major concern [3]. The selection of suitable career has turned out to be a complex science owing to its diverse disposition [4]. Numerous factors contribute to selection of career which may be extrinsic, intrinsic or combination of the both; making career selection a complicated, time consuming and daunting process. Selection of suitable career is the most important decision in an individuals' life as it affects them financially, socially and psychologically through their lives [5], [6], [7], [8].

According to a survey [9], 50% people out of one lakh fifteen thousand persons considered across thirty-three countries indicated selection of wrong career. Selection of wrong career results in wastage of individuals' potential, resources while degrading the success/sustainability of organizations and eventually hampering growth of a nation [10].

The career development of an individual is predominantly governed by their decision making competence [11]. The students are required to choose career paths mostly when studying in pre-tertiary levels. The students at this level are mostly in age group of (16-18 years), and hence are not matured enough to choose accurately what profession to follow; neither they are aware about the necessities in a specific area nor about the major academic courses which will suite their