Right course for a right student
With a suitable scholarship too – an AI approach

The possibilities are endless with the development of Artificial Intelligence based tool which can help and guide the students in selecting the suitable branch of higher studies in their area of interest to achieve their career objective.

S. DEVARAJAN
Sr. Tech. Director & DIO
s.devarajan@nic.in

P ARUMUGANAINAR
Technical Director & ADIO
arumuganainar@nic.in

With a wide range of educational institutions, multitude of courses with dissimilar course duration, varied culture of Indian cities, complicated admission processes and with plenty of future career options, present day Indian School students are ill-equipped to make the right decision as they often lack relevant and updated information for their easy admission to Institutes for Higher Education. Artificial intelligence (AI) can help the students in navigating this information maze and simplify the process of choosing the right course in a right Institute.

Analysis of primary and high school level data of students along with their social and economic profile will add more value in the AI based course selection in Indian Universities and identification of eligible scholarships for them.

Till the Secondary school level, course or stream selection is much simpler for the students. But when it comes to higher education, the decision making becomes tougher with the availability of plenty of choices in terms of courses and Institutes. Moreover, it is often difficult to change the stream once chosen at the under graduate level. Several factors affect the process of selection of course and institute. They are: Student's area of interest, Scope of the course, Eligibility criteria, Probable career options, Geographical location of the Institute, Reputation of the Institute, Course fee, Counselling and admission procedures etc. The biggest problem for the students looking for higher studies is usually the combination of their complexity and the paucity of time for completion of the entire process. While gathering all the above information, in most of the cases, a student relies on his/her parents, friends, social media, relatives and teachers. But in most of the cases, one does not get a comprehensive and suitable input and advice. Even after performing well in their final qualifying exams, many students fail to get admission in the colleges and courses they deserve due to the lack of proper inputs and confusion during the process.

DATA FACTS

Artificial Intelligence can bridge this information gap and help students in the process of choosing the right course in a right Institute. Artificial Intelligence can also identify the suitable educational financial support from the variety of available scholarships. In the near future, Indian Higher Education System (IHES) would be able to optimise the student admission process using Artificial Intelligence. In order to put the above idea into practice, various data sets need to be designed under the Digital India Programme of Government of India as elucidated below:

STUDENT PROFILE

All students may register their exact profile in a Digital India platform which is to be specially designed for this purpose. The Student profile may contain the details of his/her educational profile, area of interest, future career plan, achievements, socio-economic details of the family, geographical, linguistic and religious details. This student data set is a fact file of a student who is seeking admission for a course in higher education which is suitable with his area of interest and in line with the expected career plan.

EDUCATIONAL INSTITUTES DATA SET

With 700 Indian Universities and more than 35,000 affiliated colleges enrolling more than 2 crores students every year, higher education in India is truly a very large and complex system. A massive data set may be compiled with the details of all nationwide educational institutions, which has the entire details like available courses, eligibility criteria, mode of

admission, fee structures, course duration, specialized subjects taught, hostel details, socio-economic Government welfare schemes in the institute, geo-location of the institute and future career options related to the course. In addition to all the above, feedback provided through social media by students of the institutions will also be collected and all are to be linked to this Data Set.
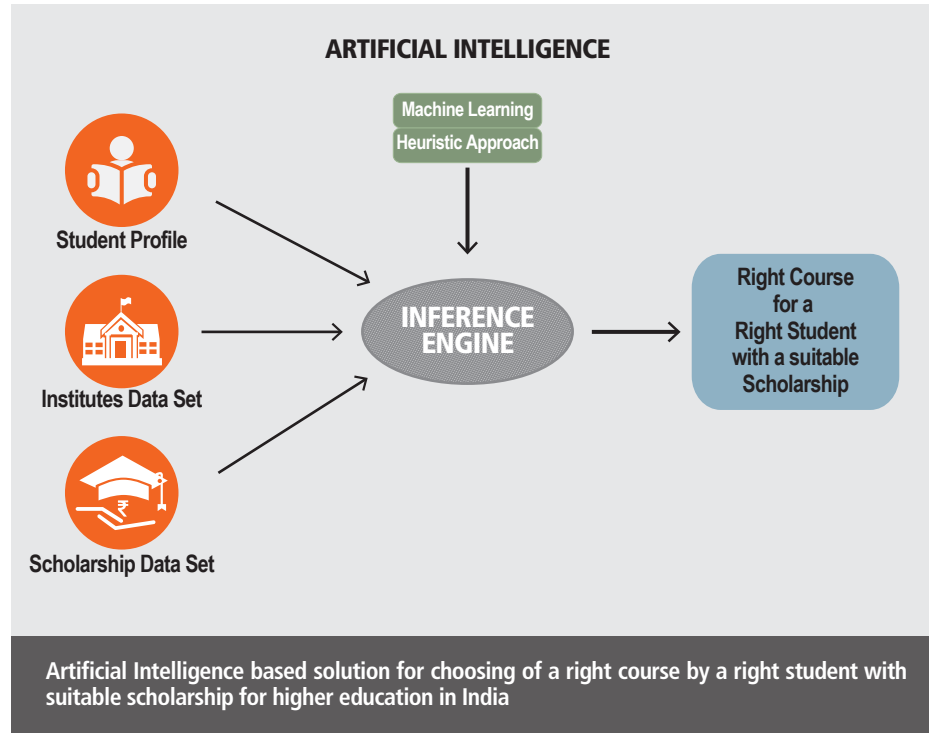
SCHOLARSHIP DATA SET

For the benefit of the students from socially and economically weaker sections, many scholarship schemes are being implemented by Central and all State Governments. But unfortunately, due to lack of awareness, many students are unable to take advantages of the schemes. Hence, another data set may also be designed with social, geographical, linguistic, religious and educational eligibility details, scholarship amount etc. This data set may contain all the Scholarship particulars of both Central and all State Governments of India.

AI BASED ANALYSIS

Keeping the above three different data sets namely Student Profile, Institutions Data Set and the Scholarship Data Set as base files of facts, the AI tool can co-relate to find all possible matching courses from various Institutes and suggest probable scholarship supports with incredible accuracy in an unbiased manner.

Thus, AI can crunch through these three different data sets and figure out which course tends to lead to that outcome that matches a student's profile and provides the best answer without any pre-defined and biased solutions. Heuristic approach is one of the AI techniques which serves as an aid in problem-solving by experimental and especially by trial and error methods. This approach will also be able to find a solution for problems which are too complex in nature. This will be able to find a guaranteed best possible solution for each student. In addition to helping in the process of discovering the right course, such AI-driven systems are much faster and can help save countless hours of effort on the part of students. Based on the educational, social and economic

ARTIFICIAL INTELLIGENCE

Machine Learning
Heuristic Approach

Student Profile

Institutes Data Set

Scholarship Data Set

INFERENCE ENGINE

Right Course for a Right Student with a suitable Scholarship

Artificial Intelligence based solution for choosing of a right course by a right student with suitable scholarship for higher education in India

profile of each student, the heuristic approach will open all eligible possibilities in Indian Institutes and a variety of courses which they have never considered or even heard of. Even AI can guide students on each and every stage of their life, beginning from their school days, by analysing educational, social and economic profile of each student with the available variety of courses in Indian Universities. Along with the selection of the Institute and Course, the same Heuristic approach of AI may also find exact matching of various Government Scholarships which suits both the student and the course.

OTHER SERVICES

With year-wise increasing size of the data sets, AI can contribute to the entire process in a variety of different ways. Machine learning is also an AI technique which can have exposure to various data sets and self-improvement. It can be used for self-developing models to process data and make predictions on choosing the right course for each student. Students can define a career objective or designation they want to attain in the future, and use the system to select the right degree accordingly. In addition to above, some value added services can also be incorpo-

rated for the benefit of the students. Alert SMS and e-Mail can be sent to students on the starting of various admission processes, entrance examination details etc. Above all, this platform may also perform as a career guidance portal for the students, right from their school days based on their fact file from time to time. By continuously analysing the students' data in the background, AI can also lend a hand to students to plan and set a target in terms of activities and scores for the best universities in India right from their school days.

CONCLUSION

The possibilities are endless and the technology is here to stay. Choosing of an accurate course by Indian school students will not be much complex like earlier. AI will pave a new way forward and derive easy methods under Digital India.