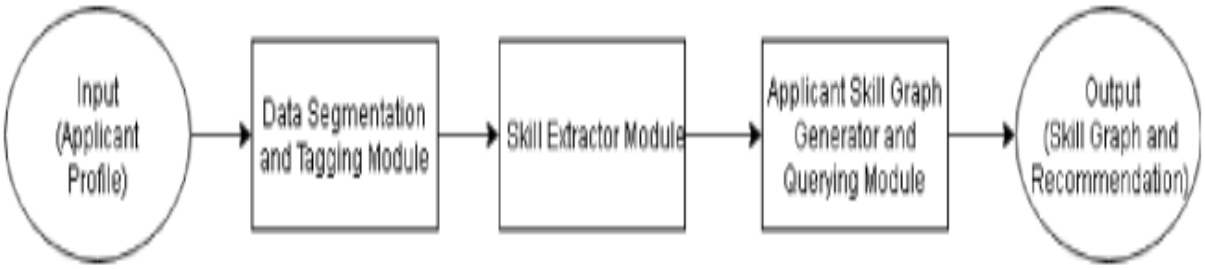
Our proposed system ingests a user's profile (in a pdf, word format or other public and shared data sources) to extract education and experiences. The extracted entities are mapped as specific skills that are expressed in the form of a skill graph. We believe that such skill graphs which capture relationships that aid in generating precise career path recommendations.

We extract each information (whether it is education or experience related) from the user profile and generate a skill graph consisting of similarity, parent-child, and dependency type relationships. To infer such relationships, we have built a skill ontology using a list of standardized data sources available online. Each node in the skill graph is also annotated with the expertise level information (how proficient the user is with respect to a skill). Career path recommendation system built on such enriched skill graphs could help in identifying the skill-based transitions that user could consider and the associated job roles or positions for such transitions. Since such recommendations are skill based, we believe these would be more useful and easier to follow as actionable items for career advancement.

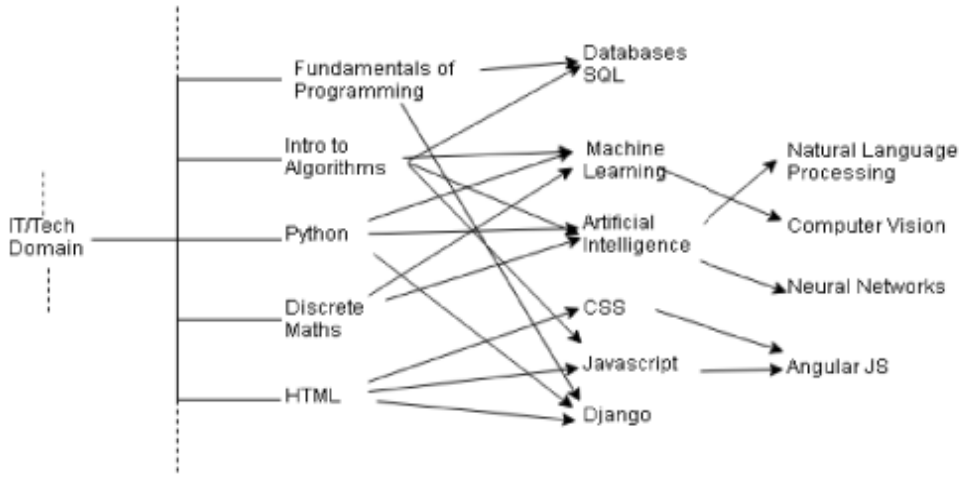
Candidate Details: Name, Email, Contact info, Websites,

Education and Academic Details: Institute, Degree, GPA, courses, degree duration, publication/patent

Experience: Job/Role (such as internship, position held, volunteer work), duration, Organization

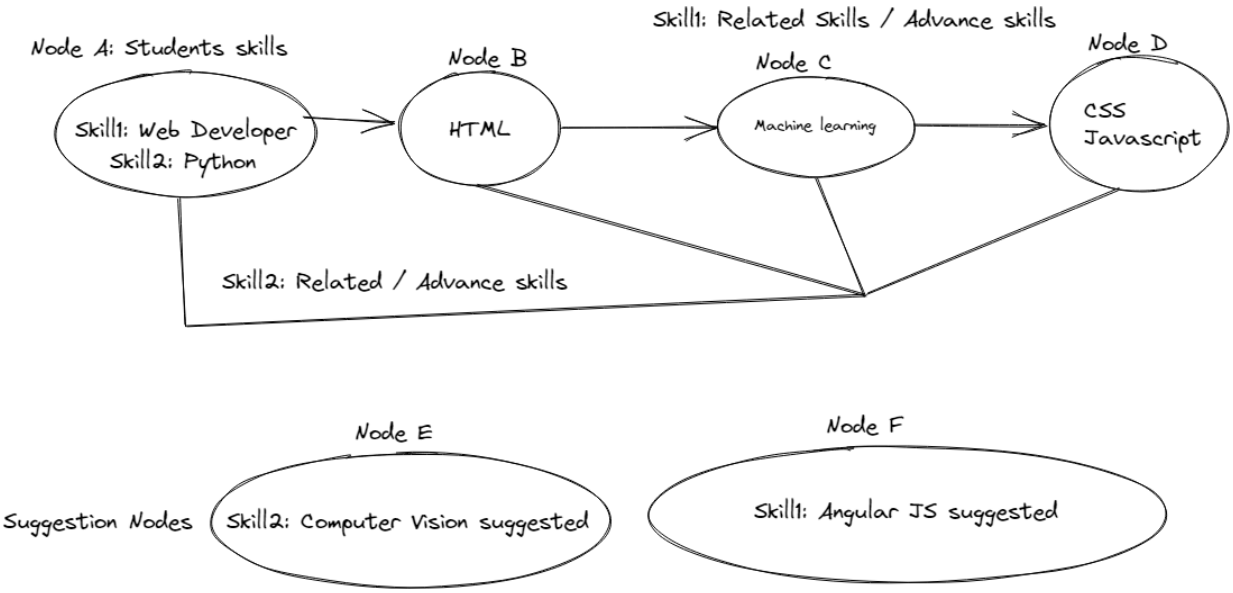


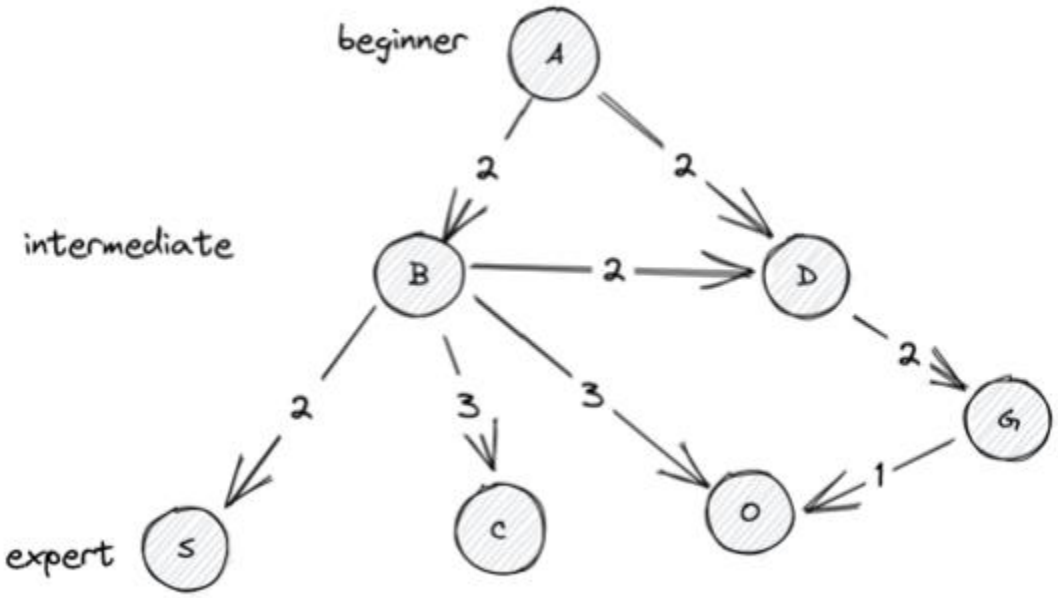
The input to the proposed system is user profile documents. The user profile could be in the form of pdf or word doc formats or text accessible from social media profile URLs. At a high level, our system consists of three major modules: • Data Segmentation and Tagging Module • Skill Extraction Module • Skill Graph Generator Module



The skills are also categorized on a rank of 0-2, where a skill of rank-0 indicates a basic skill which has no prerequisites, while a skill of rank-1 has a prerequisite, and a post-requisite skill and skill of rank-2 has only prerequisite skills and no post-requisite skills. This ranking is for an internal classification to identify the level of skill and if a higher level of skill can be acquired

Discrete Math, Python, Basics to Algorithm and HTML are classified as rank-0 skills since they are base skills and require no prerequisite knowledge. AI, CSS, and Django are rank-1 since they have both pre-skills and post-skills and similarly Neural Networks and Angular JS, Computer Vision are rank-2 since they have only prerequisites.





learning a skill:

ex1: back end C# database programmer A -> B -> S
learn C# basics A -> B (basics)
learn DB basics B -> S or B -> D, B -> F, B -> E

ex2: learn DBs and DB Administration A -> D -> G1 -> O

A - starting node
B - C# basics
C - CosmosDB
D - MongoDB
O - Oracle
S - SQL
J - Java basics
BI - C# intermediate
JI - Java intermediate
G1 - Database Administrator

Edges are the costs
One of the outputs of the graph is the estimated time for each learning path