UNIVERSITY CHANCE PREDICTOR USING DECISION NODE AND UTILITY NODE

Applied Artificial Intelligence - CS514

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Abstract:

Getting into a good university for your higher studies is quite troublesome task. Need to spend money on the applications as well on to the private tutors or helper agencies in deciding whether a student can finally land a seat in that university. This system is mainly designed for students applying from abroad to USA universities.

University chance predictor takes in all aspects of a person's or the student's data and try to predict the chances or probability of that student grabbing a seat in the university he/she dreams.

The designed model is a simple Bayesian network having twenty-five nodes and covering all the aspects of a student application to the university and deciding whether to book the flight or not given the saving money on booking the flight beforehand.

Features:

The designed systems use GRE score, TOEFL score, funding options, resume strength, SOP and LOR strength and based on these values the models give the probability of grabbing a seat in the university.

GRE score and TOEFL score will be verified for the cut off set by the university. Funding options are considered from bank, personal saving or any aids from the university as scholarship and checked if it crosses the minimum amount species by the university, that is nothing but the I-20 amount.

Strength of the student's profile is checked getting the information on his previous background such as his work experience, paper publications, patents student holds. Based on these values the SOP, LOR and resume strengths are defined as this also will be playing an important role in the grabbing the seat.

Once the chance of getting a university is know next step is booking the flight which might help you save some money if you book it as early as possible. If the student knows that probability of getting a seat in the university and if its high, booking the flight will help the student save some bucks. Hence based on the utility node "Economy_SavingMoney" value defined the decision is make by the decision node "Decision_on_Booking".

Nodes Description:

Nodes	Description
GRE_VerbalScore	Represents the cut off score for Verbal part of the GRE
GRE_QuantsScore	Represents the cut off score for Quants part of the GRE
GRE_Score	Represents the total cut off score GRE as per the requirement of the University selected
TOEFL_Speaking	Represents the cut off score for Speaking session of the TOEFL
TOEFL_Reading	Represents the cut off score for Reading session of the TOEFL
TOEFL_Writing	Represents the cut off score for Writing session of the TOEFL
TOEFL_Listening	Represents the cut off score for Listening session of the TOEFL
TOEFL_Score	Represents the total cut off score TOEFL as per the requirement of the University selected
CollateralSupport	Checks for any collateral support for the education loan that the student might apply
Funding_FromBank	Based on the root or the child node for checking the support of collateral we will be checking how much the bank is willing to lend the loan
Funding_Personal	If there are any personal financial support this node just verifies if its more than the required amount or till what extent the amount can be used
ScholarshipSupport	Represents any kind of scholarship from the university which might support for student's financial status
Funding_Options	This represents the total or the over all view of the funding status for the student
Personal_Projects	Represents the student's personal projects built which might strengthen his/her profile
Work_Experience	To check if the applicant has any kind of work experience
Internship	To check if the applicant has any kind of internships

PaperPublications	To check any paper publications the applicant has published which might also impact his profile
Patents	To verify any of the patents in the applicant's name
Resume	Based on all the student's previous history, this node is defined to be strong or weak or its average
LOR	Letter of recommendation who's impact obviously depends on his profile which will be represented by this node
SOP	Statement of purpose will also play a very important role as this node is the parent node of many student's node which helps in evaluating the profile
University	This node is the final output node, based on the probabilities defined for other various nodes, chances of landing on a seat in a university is given.
Decision_on_Booking	Decision node which decides whether to book the flight or not based on the probability of "University" node and the defined utility value.
Economy_SavingMoney	This is a utility node which has defined utility values based on whether the student will end up saving money or not based on getting in to the university i.e. based on the value predicted by the university nature node.

Usage Manual:

Copy the file University_ChancePredictor_Dork-N00b.neta in any location and open the file in Netica. Compile the network and input values by clicking on all the root nodes (node without parents) to see the changes flowing through the Bayesian Network.