Applied Artificial Intelligence -Project3

Username-Toothless

Domain:Vehicle Accident prediction

Abstract:

In this project Bayesian probability network is designed using NETICA,which takes the user input via different variables and finally predicts the occurrence of accident.

Here 16 nature nodes are used for the prediction of Accident. The nature nodes are chosen are based on historical and significant factors causing the accident.
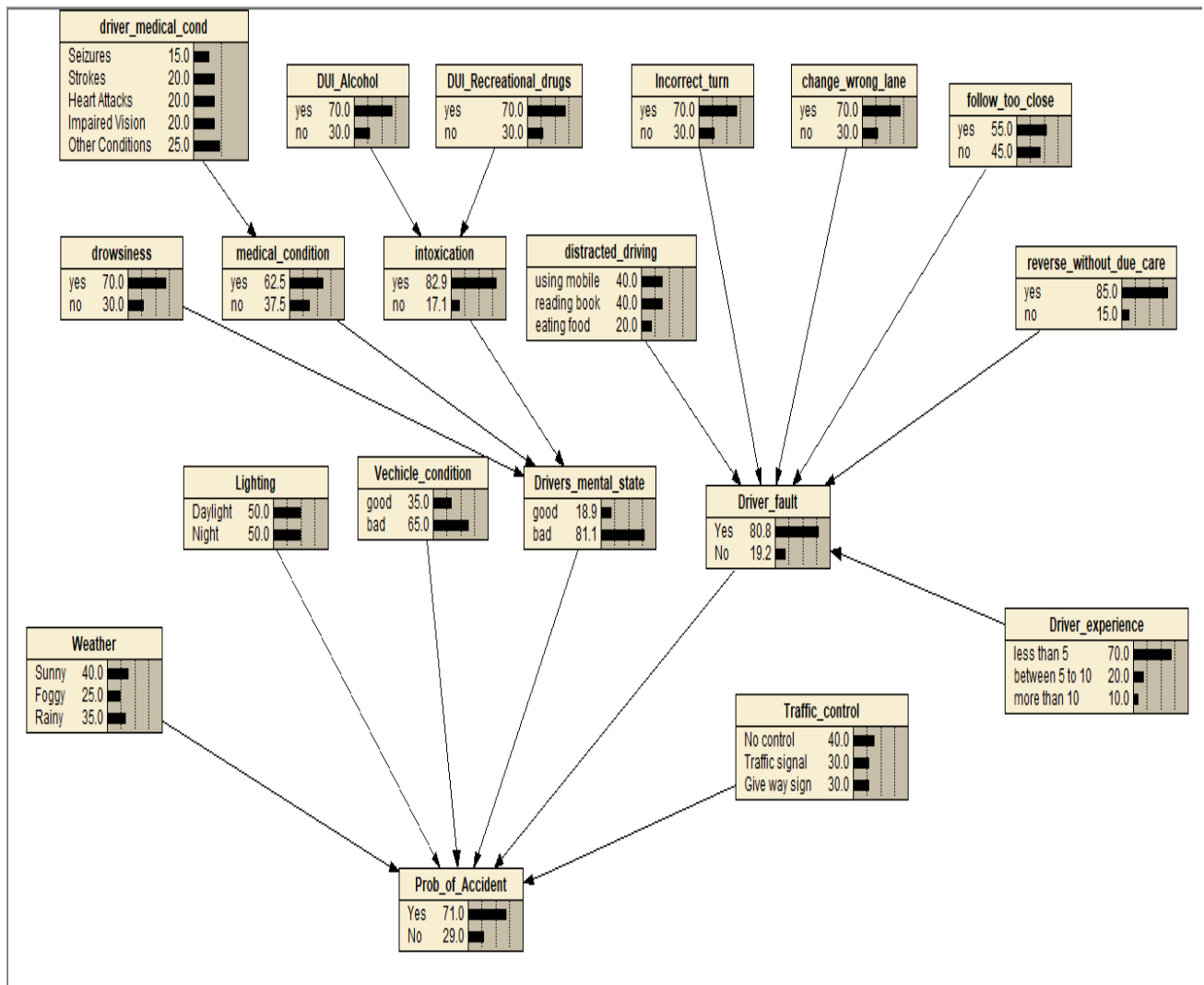
Future work may include addition of many correlated factors causing the accident. This may include the vehicle makes, vehicle last serviced,road junction types, accident country and driver's native country,etc

Instructions to run:

1.Open "Accident Probability.neta" on Netica

2.Compile it

3.Vary the probabilities to see changes in the result

Test Cases:

#1

driver_medical_cond
Seizures	15.0
Strokes	20.0
Heart Attacks	20.0
Impaired Vision	20.0
Other Conditions	25.0

DUI_Alcohol
yes	70.0
no	30.0

DUI_Recreational_drugs
yes	70.0
no	30.0

Incorrect_turn
yes	70.0
no	30.0

change_wrong_lane
yes	70.0
no	30.0

follow_too_close
yes	55.0
no	45.0

drowsiness
yes	70.0
no	30.0

medical_condition
yes	62.5
no	37.5

intoxication
yes	82.9
no	17.1

distracted_driving
using mobile	40.0
reading book	40.0
eating food	20.0

reverse_without_due_care
yes	85.0
no	15.0

Lighting
Daylight	50.0
Night	50.0

Vechicle_condition
good	35.0
bad	65.0

Drivers_mental_state
good	18.9
bad	81.1

Driver_fault
Yes	80.8
No	19.2

Weather
Sunny	40.0
Foggy	25.0
Rainy	35.0

Driver_experience
less than 5	70.0
between 5 to 10	20.0
more than 10	10.0

Traffic_control
No control	40.0
Traffic signal	30.0
Give way sign	30.0

Prob_of_Accident
Yes	71.0
No	29.0

Test case#2:

driver_medical_cond

Seizures	15.0
Strokes	20.0
Heart Attacks	20.0
Impaired Vision	20.0
Other Conditions	25.0

DUI_Alcohol

yes	100
no	0

DUI_Recreational_drugs

yes	70.0
no	30.0

Incorrect_turn

yes	70.0
no	30.0

change_wrong_lane

yes	70.0
no	30.0

follow_too_close

yes	55.0
no	45.0

drowsiness

yes	70.0
no	30.0

medical_condition

yes	62.5
no	37.5

intoxication

yes	91.0
no	9.00

distracted_driving

using mobile	100
reading book	0
eating food	0

reverse_without_due_care

yes	85.0
no	15.0

Lighting

Daylight	0
Night	100

Vechicle_condition

good	0
bad	100

Drivers_mental_state

good	16.1
bad	83.9

Driver_fault

Yes	80.3
No	19.7

Weather

Sunny	0
Foggy	100
Rainy	0

Driver_experience

less than 5	70.0
between 5 to 10	20.0
more than 10	10.0

Traffic_control

No control	100
Traffic signal	0
Give way sign	0

Prob_of_Accident

Yes	84.0
No	16.0