

# **Eye-diseases Diagnosing System Using Decision Net**

**NICKNAME:** ZAEMON

**PROJECT NAME:** EYE-DISEASES PREDICTOR

**DESCRIPTION:**

Eye-diseases predictor is a Bayesian network based application that predicts an individual's chance of getting an eye-disease by assessing presence or absence of symptoms of various eye-diseases and determines if the individual has an eye-disease. It also provides suitable treatment options and evaluates the extent of effect of the treatment. The application is developed using Netica.

These diseases can be detected by looking for various symptoms and we calculate their probability by using probabilistic reasoning.

All these symptoms are thus analyzed by the system which in the end gives an output whether the individual suffers from an eye-disease or not and whether the treatment helps to improve the eye-condition.

**FEATURES:**

1. Various symptoms are taken into account to determine the absence or presence of an eye-disease and the conditional probabilities of these diseases determine the treatment options.
2. The decision node "Treatment\_options" is used to provide suitable treatment option for a disease.
3. The utility node "Eyesight\_Improves" is used to model the change in the eyesight of the patient depending on the treatment provided.

**USAGE MANUAL:**

Download and place the "zaemon\_4.dne" file in any directory and open it through NETICA application. Compile the project and after the network is initialized, modify and set the values accordingly and see how the network adapts to the change robustly and follows the trend as correctly as possible.

**Note:** There may arise a situation where the application throws an "Inconsistency" error. This might be an error programmatically, but it is intentional and logical. The error is thrown when one tries to toggle any symptom to "Absent" but tries toggling the eye-disease it leads to "Present". This is not possible since it defined that if any one of the symptoms is absent, the eye-disease it leads to will be absent. Hence, the notion behind it is correct.

## BAYESIAN NETWORK:

