DETECTION OF OBSTRUCTIONS IN VESSELS IN FUNDUS IMAGES

201311018 – Aykut ER
201411045 – Egeberk ÖZBERK

Advisor: Roya CHOUPANI

INTRODUCTION

▸ Our project's main purpose is to detect emboli occurrences in retinal fundus images

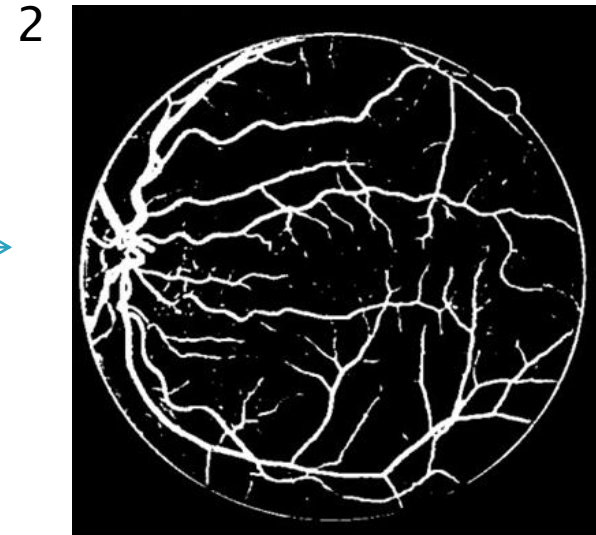▸ Emboli is an obstruction that blocks the stream of the blood.
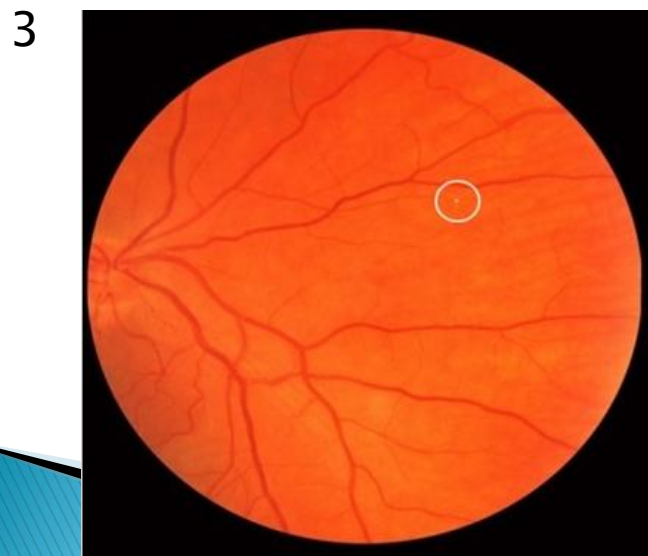
INTRODUCTION

Our project is divided into two parts:

▸ Segmentation Process Part

▸ Emboli Detection Part

Segmentation Process Part

1

2

Emboli Detection Part

3

MOTIVATION

- Find emboli occurrences much more quickly than the doctor.

- Reduce the amount of time spent by the doctor to diagnose.

SOLUTION

- ## Segmentation Process Part
  - Neural Network
    - Pixel-wise classification

- ## Emboli Detection Part
  - Threshold Method
    - Binary vessel map matching

RESULTS

- Segmentation Accuracy
  - At maximum 84%
  - Average 75%

- Emboli Detection
  - Limited data is a major concern !!

FUTURE WORK

- Feedback Mechanism
  - Enabling our software to produce it's output more accurately.

- Better Hardware
  - Training the neural network requires too much computational power.

THANK YOU FOR LISTENING !