Machine Learning to Predict Diabetic Retinopathy

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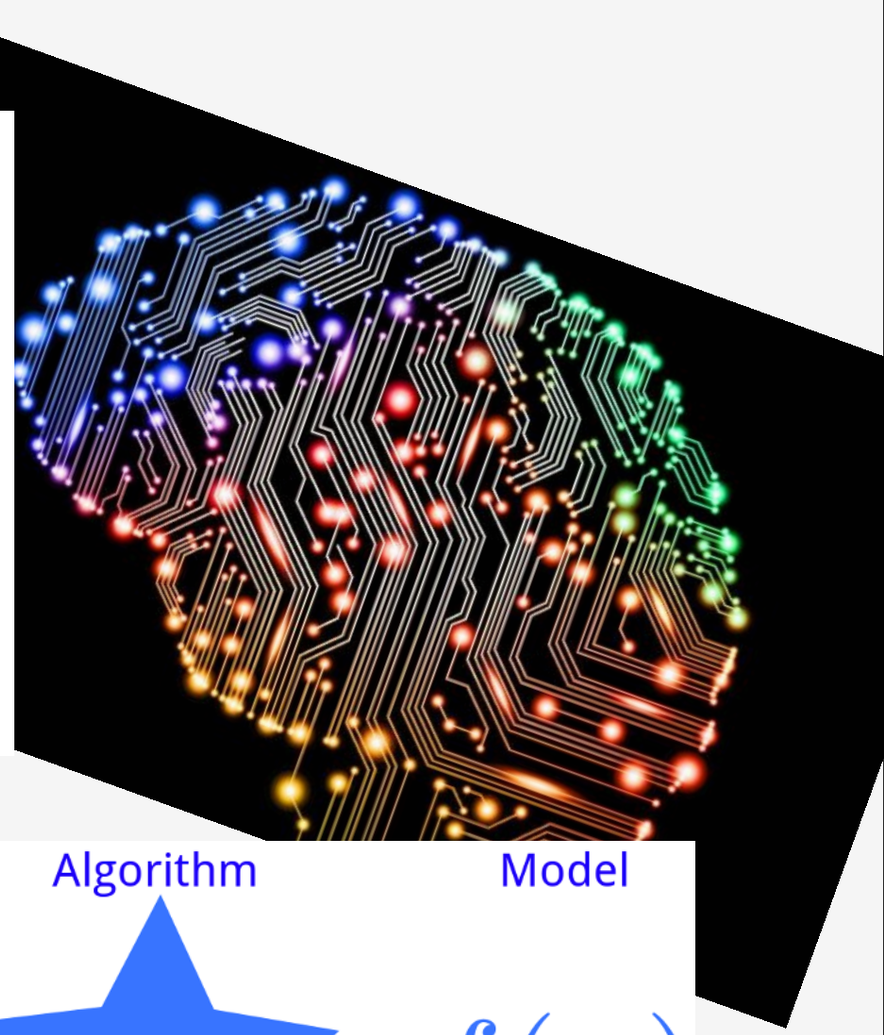
Obligatory

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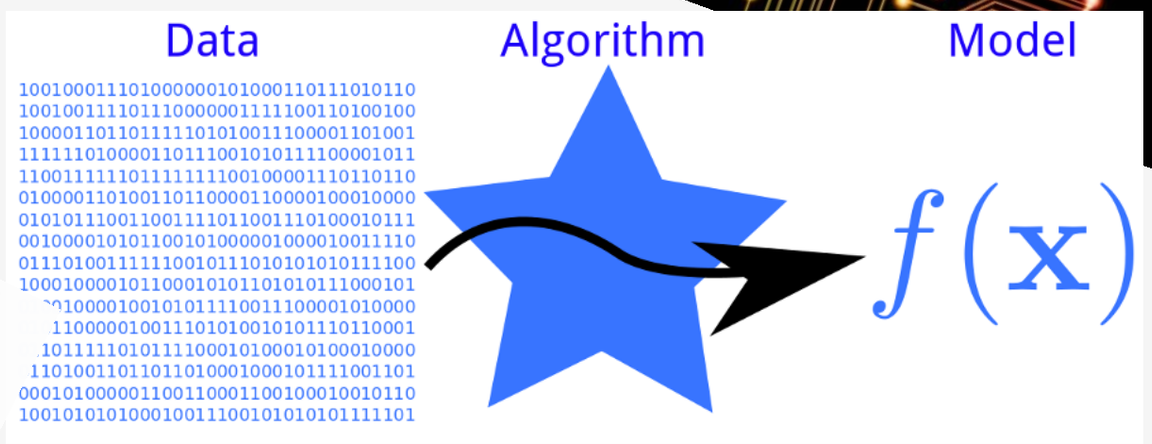
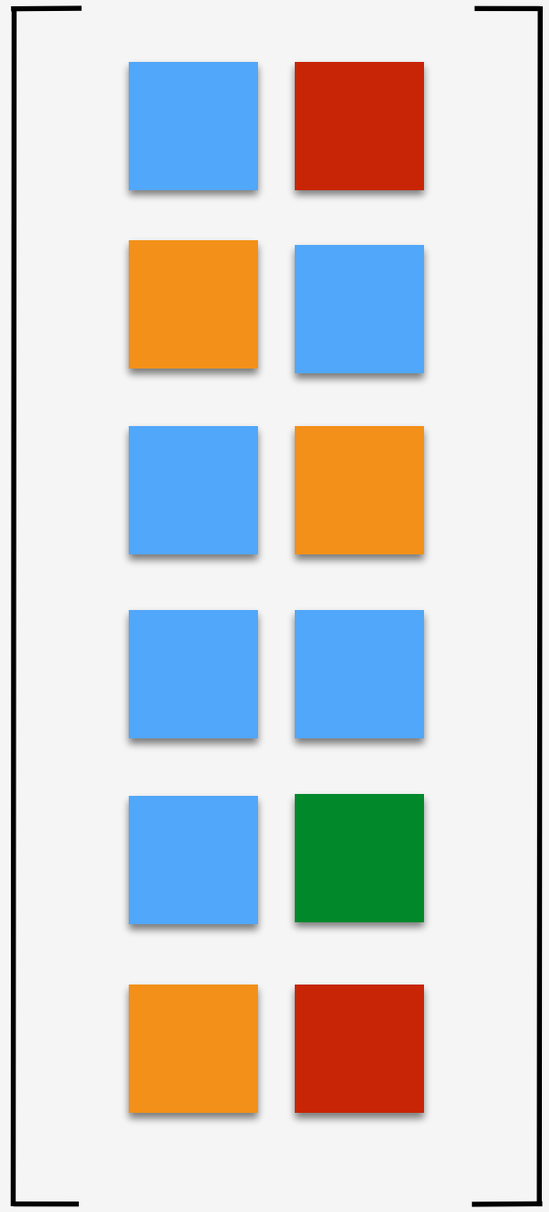

Data
Algorithm
Model
$f(x)$

What is ML

Do the activity

What is ML (cont.)

F  = 6 2 3 1

What is ML (cont.)

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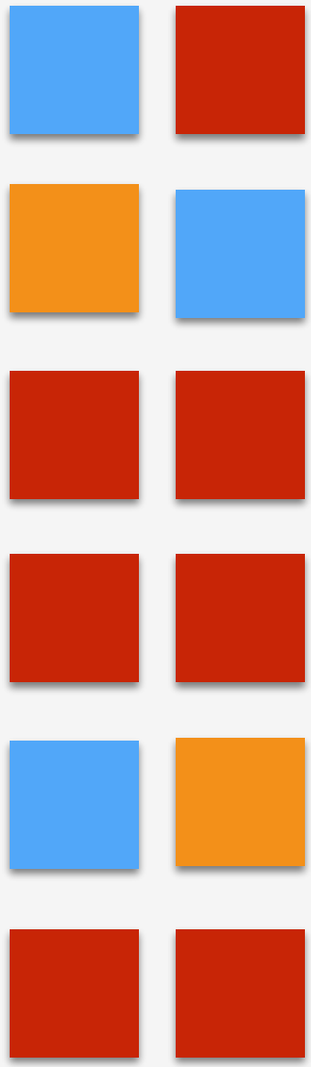
Types of Problems

Supervised Learning

6



3

2

7

3

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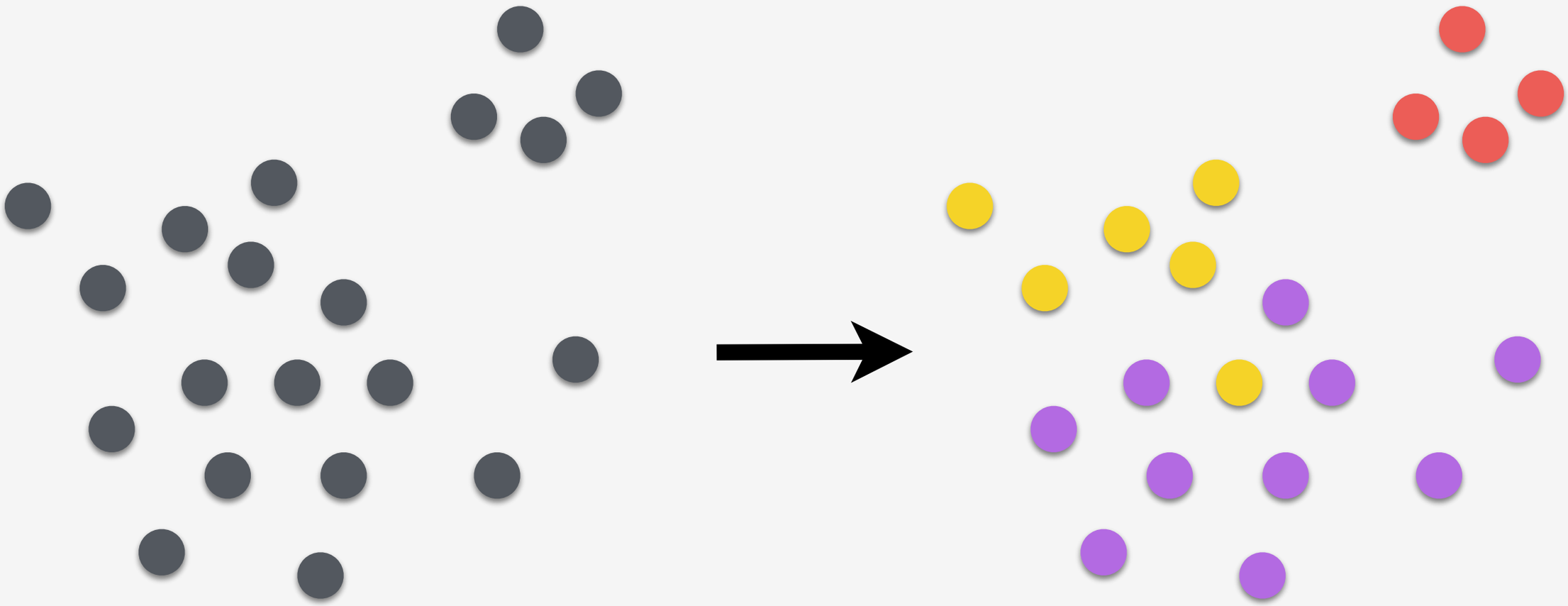
Train

?

Predict

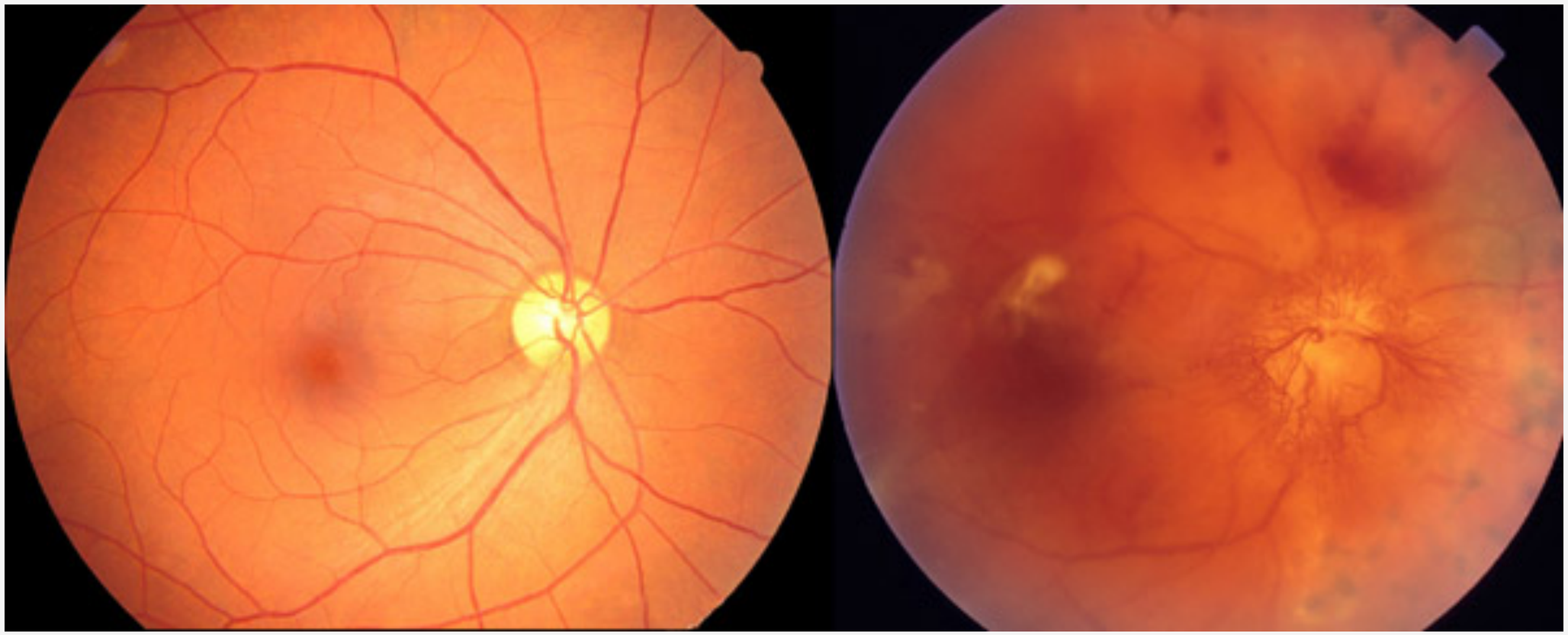
Unsupervised Learning



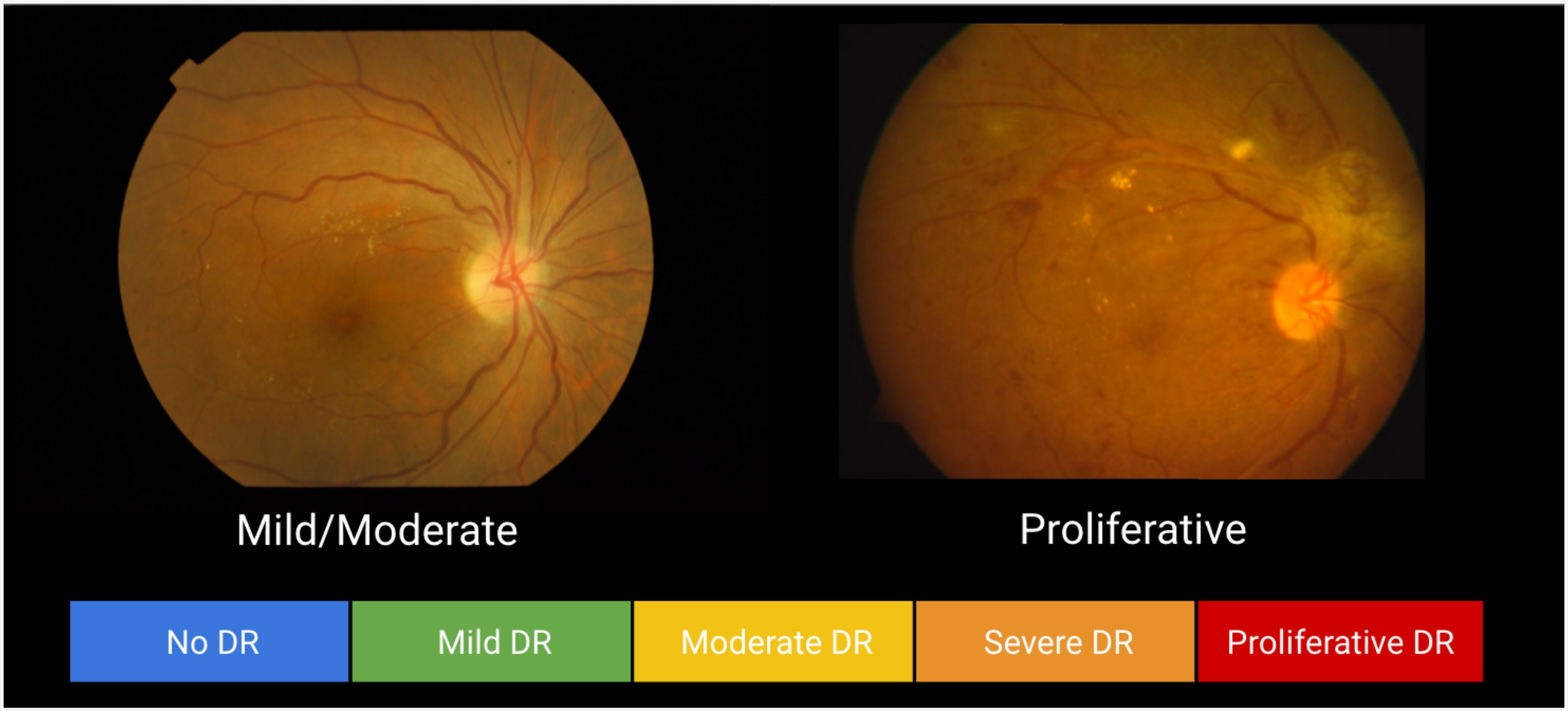
Reinforcement Learning

*very simplistic image

Diabetic Retinopathy



Diabetic Retinopathy



Diabetic Retinopathy

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Development and Validation of a Deep Learning Algorithm for Detection of Diabetic Retinopathy in Retinal Fundus Photographs

Venue

JAMA (2016)

Publication Year

2016

Abstract

Importance: Deep learning is a family of computational methods that allow an algorithm to program itself by learning from a large set of examples that demonstrate the desired behavior, removing the need to specify rules explicitly. Application of these methods to medical imaging

Acknowledgements

- Thanks to the UCI Machine Learning Repository for the DR data
- All images from Google Images