

# Computer vision

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## Part I

# Computer vision

## Chapter 1

# Classifying written characters

### 1.1 Character recognition

#### 1.1.1 MNIST

## Chapter 2

# Classifying images

### 2.1 Image recognition

#### 2.1.1 CIFAR-10

#### 2.1.2 ImageNet

## Chapter 3

# Facial recognition

### 3.1 Facial recognition

#### 3.1.1 FERET



## Chapter 4

# Computer vision

### 4.1 Camera vision

#### 4.1.1 Camera inputs

### 4.2 Classifying images

### 4.3 Semantic image segmentation

### 4.4 Building 3D models

#### 4.4.1 Multi-view CNNs

#### 4.4.2 Volumetric models

#### 4.4.3 Point clouds

#### 4.4.4 Polygon mesh

#### 4.4.5 Generative Query Network (GQN)

#### 4.4.6 Primitive-based CAD

#### 4.4.7 3D ShapeNets

#### 4.4.8 Building 3D models from scans

### 4.5 LIDAR

#### 4.5.1 LIDAR

#### 4.5.2 Classification with voxels

#### 4.5.3 Absolute risk aversion

Correspondence (2 models of humans in different poses; understand where each part of one relates to a specific part of the other)



#### **4.5.4 Parsing**

Multitple objects in scene, objects have parts segmentation.