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Use Case and High-Level Description

Head pose estimation network based on simple, handmade CNN architecture. Angle convolutions + ReLU + batch norm + fully connected with one output.

Validation Dataset

Biwi Kinect Head Pose Database

Example

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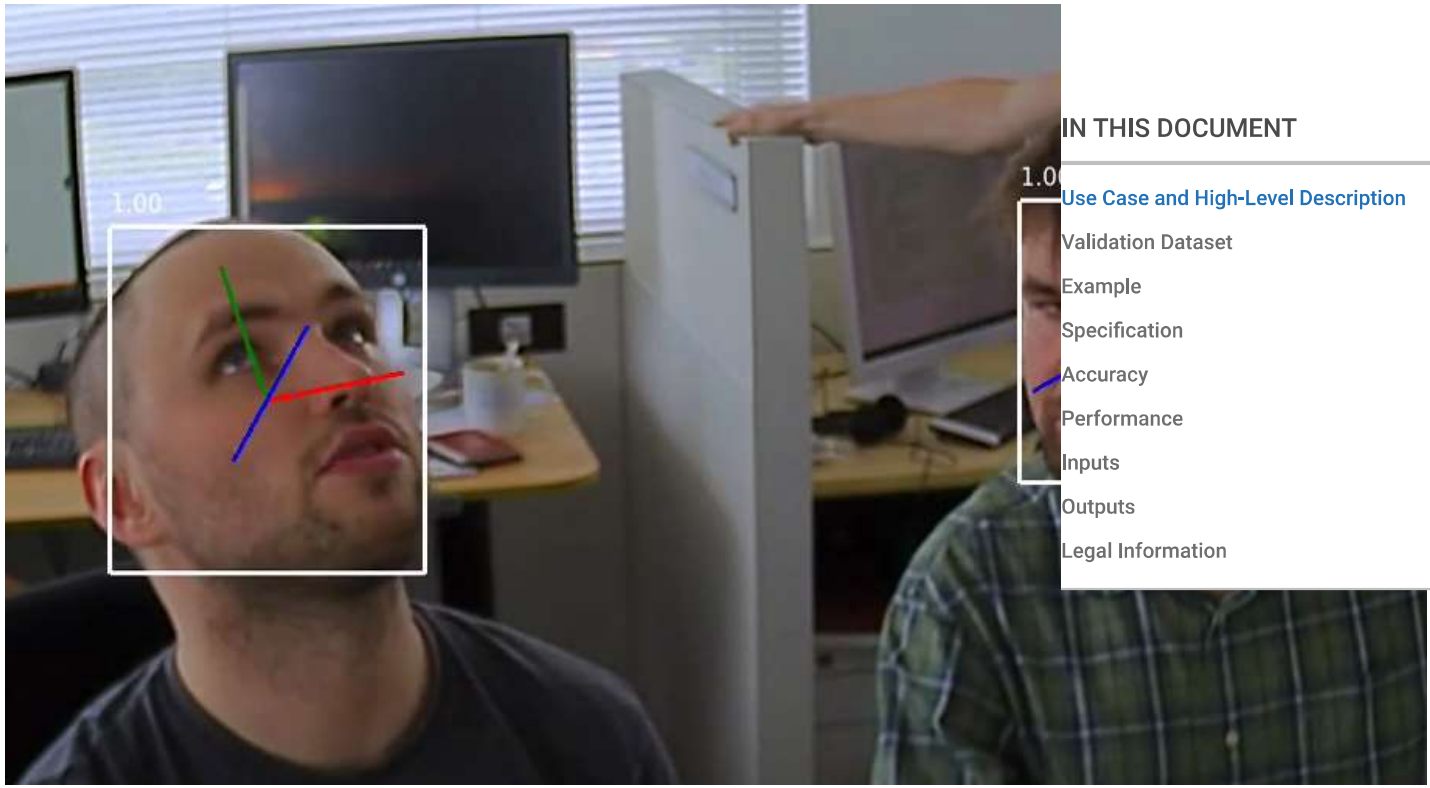

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Specification

METRIC VALUE

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METRIC	VALUE
Supported ranges	YAW [-90,90], PITCH [-70,70], ROLL [-70,70]
GFlops	0.105
MParams	1.911
Source framework	Caffe*

Accuracy

ANGLE	MEAN ± STANDARD DEVIATION OF ABSOLU
yaw	5.4 ± 4.4
pitch	5.5 ± 5.3
roll	4.6 ± 5.6

Performance

Inputs

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1. name: "data" , shape: [1x3x60x60] - An input image in [1xCxHxW] format. Expected color order is BGR.

Outputs

Output layer names in Inference Engine format:

1. name: "angle_y_fc", shape: [1, 1] - Estimated yaw (in degrees).
2. name: "angle_p_fc", shape: [1, 1] - Estimated pitch (in degrees).
3. name: "angle_r_fc", shape: [1, 1] - Estimated roll (in degrees).

Output layer names in Caffe* format:

1. name: "fc_y", shape: [1, 1] - Estimated yaw (in degrees).
2. name: "fc_p", shape: [1, 1] - Estimated pitch (in degrees).
3. name: "fc_r", shape: [1, 1] - Estimated roll (in degrees).

Each output contains one float value that represents value in Tait-Bryan angles (yaw, pitch or roll).

Legal Information

[*] Other names and brands may be claimed as the property of others.

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