
Defining Gestures from Optical Flow: Week 12

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Current Progress and Goals

Recent Progress

- ▶ Collected New Test Set (450 Gesture Instances)
- ▶ Created New Classifier

Current Goal: Finish paper

- ▶ Compute final results for paper
- ▶ Perform final edit (for REU period, paper subject to later revision)

New Dataset

New Testing Examples

- ▶ 3 Individuals
- ▶ 15 Gestures
- ▶ 10 Instances of Each
 - ▶ Half in one location (same room as training), half in another (different room as training)
- ▶ Total: 30 Instances of each gesture (450 cases)

Results with Reuben Classifier - One Person

	Ba	Ca	Ci	Fo	In	Le	Pi	Re	Ri	S_	St	Tr	Tw	V	Zo	
Ba	20	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ca	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ci	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0
Fo	0	0	0	90	0	0	10	0	0	0	0	0	0	0	0	0
In	0	0	0	0	90	0	0	10	0	0	0	0	0	0	0	0
Le	0	0	10	0	0	90	0	0	0	0	0	0	0	0	0	0
Pi	0	0	0	0	10	10	80	0	0	0	0	0	0	0	0	0
Re	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0
Ri	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0
S_	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0
St	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0
Tr	0	0	0	0	0	0	10	10	0	0	0	80	0	0	0	0
Tw	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0
V	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0
Zo	0	0	0	0	20	0	0	0	0	0	0	0	0	0	100	80

Mean Accuracy:

► 88.67%

Results with New Classifier - One Person

	B. Slash	Caret	Circle	F. Slash	Inverse	L. Bracket	Pigtail	Rectangle	R. Bracket	S	Stab	Triangle	Twist	V	Zorro
B. Slash	50	50	0	0	0	0	0	0	0	0	0	0	0	0	0
Caret	10	90	0	0	0	0	0	0	0	0	0	0	0	0	0
Circle	0	0	90	0	0	0	0	0	0	0	0	0	0	0	10
F. Slash	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0
Inverse	0	0	0	0	90	0	0	0	10	0	0	0	0	0	0
L. Bracket	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0
Pigtail	0	0	0	0	10	0	70	0	0	0	0	0	0	0	20
Rectangle	0	0	0	0	0	0	0	90	0	0	0	10	0	0	0
R. Bracket	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0
Stab	0	0	0	0	0	0	10	0	0	0	90	0	0	0	0
Triangle	0	0	0	0	0	0	10	0	0	20	0	70	0	0	0
Twist	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0
V	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
Zorro	10	0	0	0	0	0	0	0	10	0	0	0	0	0	80

Mean Accuracy:

► 88.00%

Results with New Classifier - Three People

	B. Slash	Caret	Circle	F. Slash	Inverse	L. Bracket	Pigtail	Rectangle	R. Bracket	S	Stab	Triangle	Twist	V	Zorro
B. Slash	73	20	0	0	7	0	0	0	0	0	0	0	0	0	0
Caret	3	97	0	0	0	0	0	0	0	0	0	0	0	0	0
Circle	0	0	73	0	0	10	0	0	0	0	0	0	0	10	7
F. Slash	3	0	0	83	0	0	0	0	7	0	7	0	0	0	0
Inverse	0	0	0	0	80	0	0	0	3	0	0	0	0	0	17
L. Bracket	0	0	0	0	0	97	0	3	0	0	0	0	0	0	0
Pigtail	0	0	0	0	7	0	87	0	0	0	0	0	0	0	7
Rectangle	0	0	0	0	0	0	0	97	0	0	0	3	0	0	0
R. Bracket	3	0	0	0	0	0	0	0	97	0	0	0	0	0	0
S	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0
Stab	0	0	0	3	0	0	3	0	0	0	90	0	0	3	0
Triangle	0	0	0	0	0	0	3	3	0	13	0	80	0	0	0
Twist	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0
V	3	0	0	0	0	0	0	0	0	0	0	0	0	90	7
Zorro	3	0	0	0	0	0	0	0	3	0	0	0	0	0	93

Mean Accuracy:

► 89.11%

Analysis

- ▶ New classifier performs comparably with Reuben classifier
- ▶ Benefit: New classifier is more intuitive and potentially faster

Future Goals

- ▶ Compare ego-motion estimation to Phill's, hoping for better gesture recognition
- ▶ Finish paper