

Project-2018: overview and directions



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April 5th, 2018

Results

- LIF tested to failure
- Microsaccade, curvature, pupil
- Saliency modularized
 - Launching point for other projects
- RBM + diffusion
- DBN + LIF
 - Tested + ECVP
- DLNN classifier + TMS
 - Pilot + ECVP
- IOR frame of reference
 - Eye tracking study

Leftovers

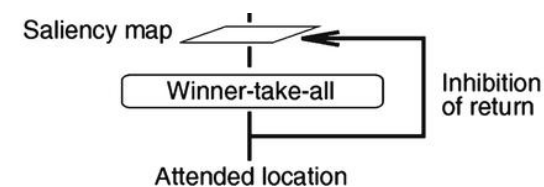
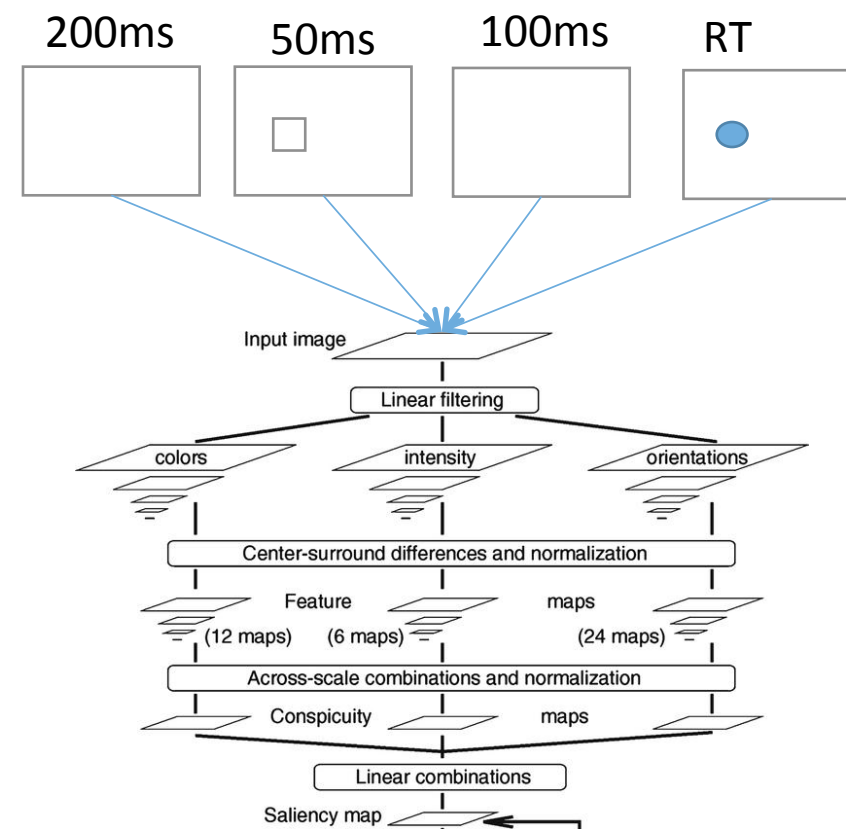
- IOR frame of reference
 - One analysis remaining plus final edits
 - Generative additive model for non-linear results
- Under review
 - Liya's LIF paper
 - Roopali's microsaccade paper

NUG objectives

- Commitment of either
 - 3.5 hours per week (Undergrad and non-student)
 - or 7 hours per week (Master's)
- Objective 2: Get everyone involved in publishable projects
 - Outside of your current research
 - Learn new research skills
 - First author or co-author on a paper or conference
- Objective 3: Teach each other
 - NUG workshops
 - Practice presenting results within the group
 - We all have skills we bring to the group

Posner temporal

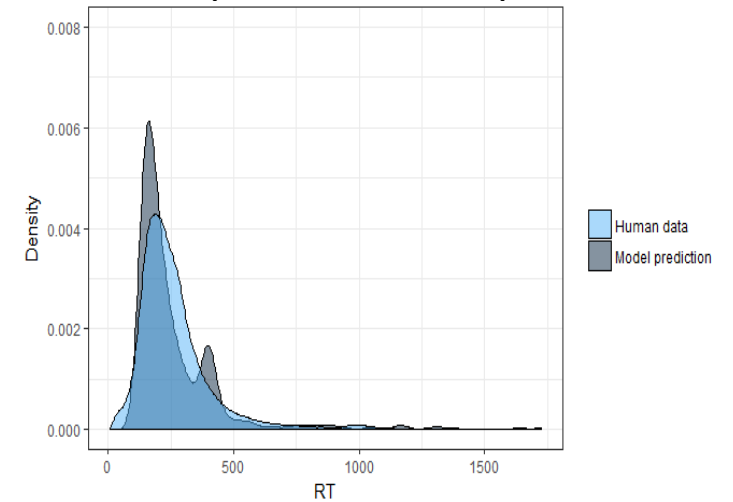
- Group 1
 - Posner temporal salience model
 - We have already finished A) here
 - B) test and optimize



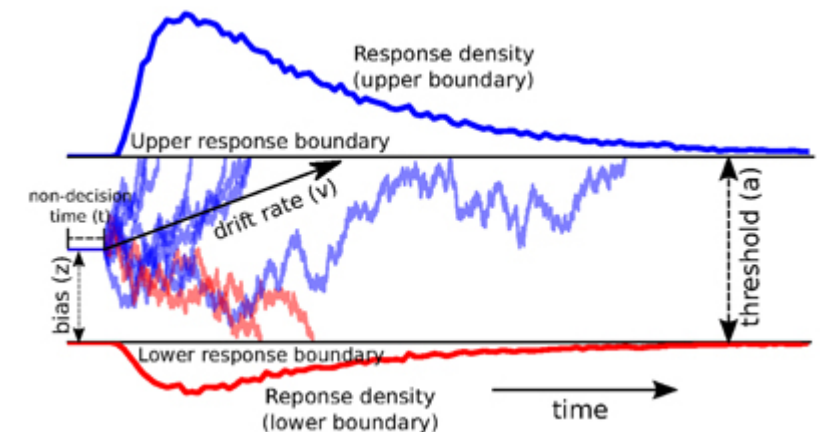
Spatio-temporal diffuse

- Group 2
 - Replace LIF with diffusion or race model
- A) first step is looking at literature comparing Leaky accumulator, diffuse and LIF
- B1) This requires partitioning/clustering space
- B2) Or making 2d race model
- C) New parameter! make sure it accounts for response inhibition

LIF: Spatial, not temporal



Diffusion: temporal, not spatial



New Groups

- Group 3
 - TMS and V1
 - Simulate **Hemianopia**
 - Lesion in early visual areas changes the way we allocate overt attention
 - Few saccades to 'blind areas'
- A) First simulate with gaze contingent experiment.
- B) Then model with Saliency and/or DLNN
- C) Then match with TMS



Group 4

- Semantic....

Presentations

- April 19
 - Beyond the LIF and drift diffusion models
- April 26th
 - lesioning DLNNs
- May 10th
 - microsaccade and curvature algorithms
- May 24th
 - generating salience maps – ways that work and ways that don't

Workshops

- NIPS submissions
 - Final papers due May 18th
- Intro to Machine learning
 - Friday evening plus Saturday
 - Late may, June
- Eye tracking workshop
 - September
- Java programming