SANI Architecture - Object Recognition Development Specification - 17-21 September 2021
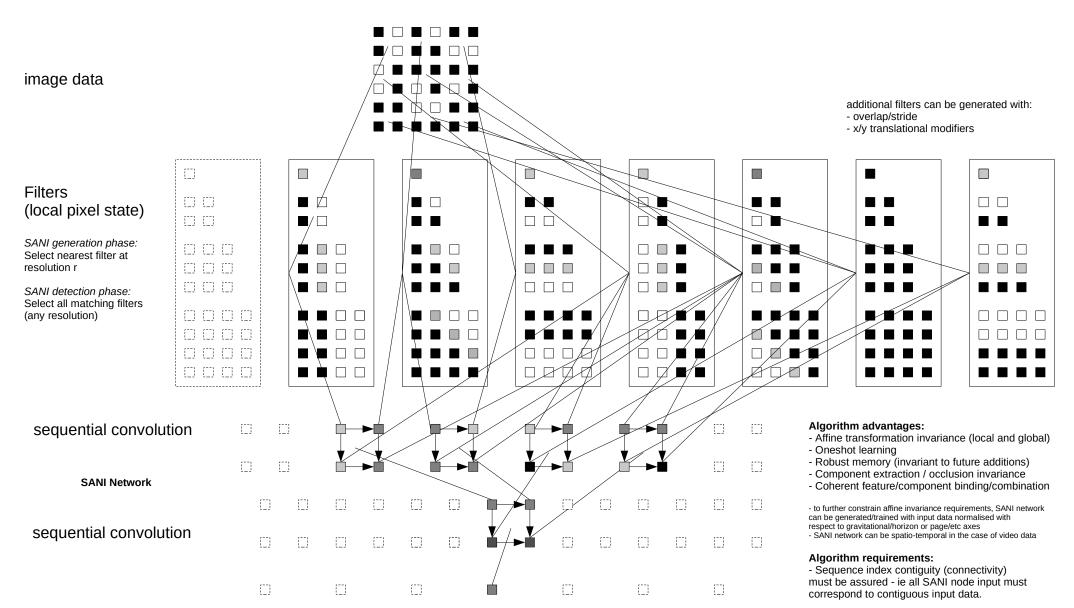
sequentially activated neuronal input neural network

image data

additional filters can be generated with:
- overlap/stride
- x/y translational modifiers

Filters
(local pixel state)

SANI generation phase:
Select nearest filter at
resolution r

SANI detection phase:
Select all matching filters
(any resolution)

sequential convolution

SANI Network

Algorithm advantages:
- Affine transformation invariance (local and global)
- Oneshot learning
- Robust memory (invariant to future additions)
- Component extraction / occlusion invariance
- Coherent feature/component binding/combination

- to further constrain affine invariance requirements, SANI network
can be generated/trained with input data normalised with
respect to gravitational/horizon or page/etc axes
- SANI network can be spatio-temporal in the case of video data

Algorithm requirements:
- Sequence index contiguity (connectivity)
must be assured - ie all SANI node input must
correspond to contiguous input data.

sequential convolution

object identification

Author: Richard Bruce Baxter - © 2021 Baxter AI (baxterai.com)