

# Updates to RODAN Gamera Interactive Classifier

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# History

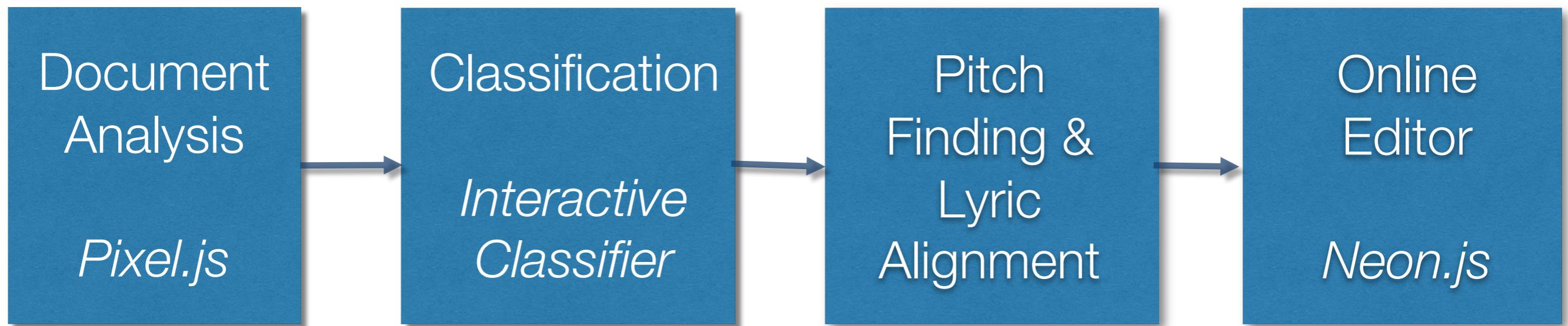
- Originally a part of Gamera, a framework for document analysis applications by Karl MacMillan, Michael Droettboom, and Ichiro Fujinaga in 2001
- Implemented as a RODAN job in 2014 by Andrew Fogarty and extended by Sacha Perry-Fagant and Alex Daigle in 2017

Michael Droettboom, Ichiro Fujinaga, Karl MacMillan, G. Sayeed Choudhury, Tim DiLauro, Mark Patton and Teal Anderson.  
“Using the Gamera framework for the recognition of cultural heritage materials.” JCDL (2002)

# Interactive Classifier

- A web-based tool for classifying symbols
- Two-part classification
  - ▶ Manual correction: user gives examples
  - ▶ Automatic correction: machine learns from examples

# Interactive Classifier in OMR



# Manual Correction

- Assign classes
- Delete classes
- Rename classes
- Group glyphs
- Split glyphs

Interactive Classifier    Submit Corrections and Re-Classify    Finalize Classification and Save GameraXML    Group Glyphs and Re-Classify

Classes

- UNCLASSIFIED
- neume
  - clivis
  - podatus
  - punctum
  - torculus

Classifier Glyphs

neume.clivis	
neume.podatus	
neume.punctum	

Edit

Connected Components

Class: neume.virga    Update

Splitting: Split x    Split

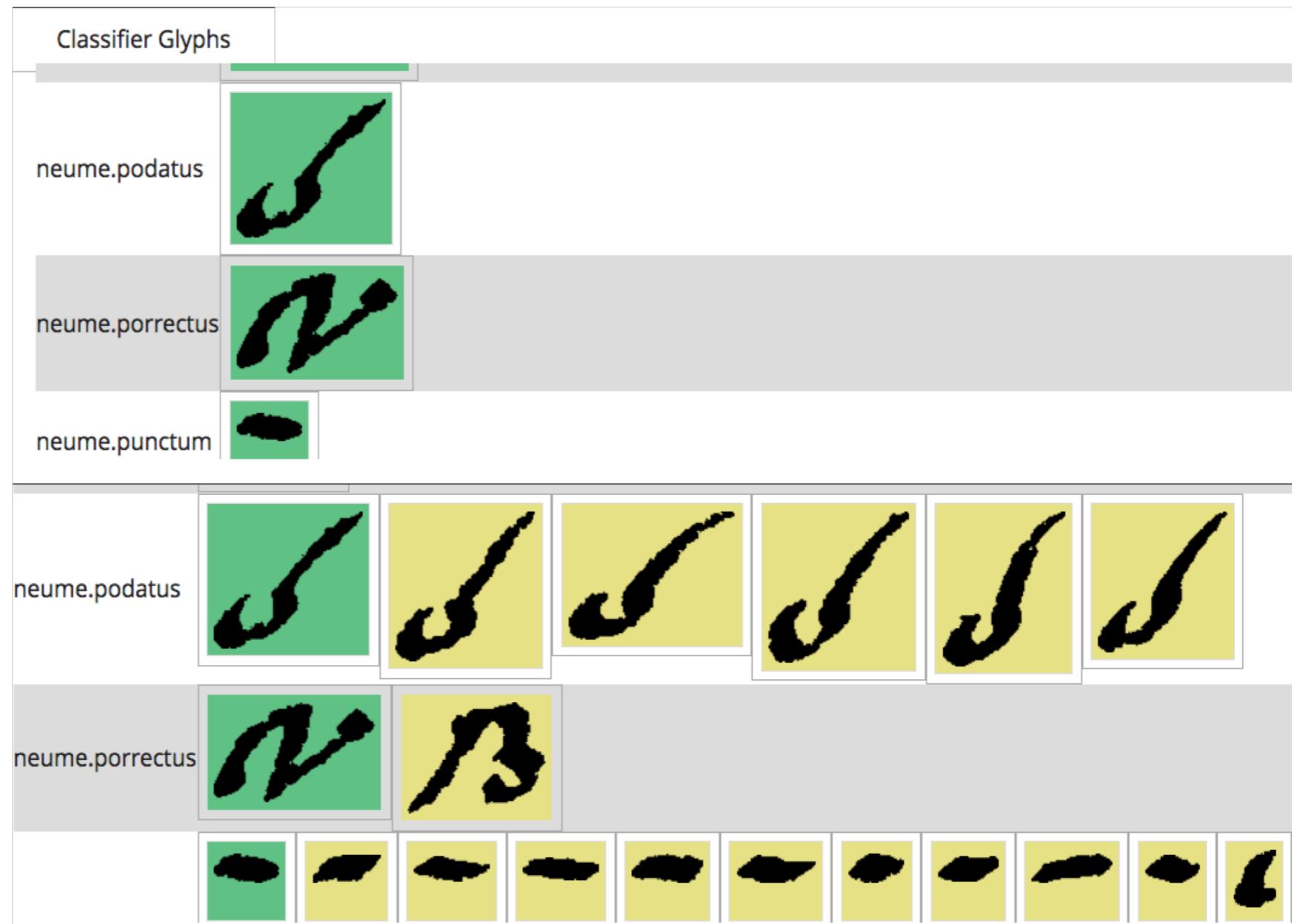
Manual ID: false    Confidence: -1

Position: (1650, 1650)    Dimensions: (46, 66)

UNCLASSIFIED

# Automatic Correction

- Uses the k-nearest neighbors algorithm
- Match each glyph to the model with the most similar features

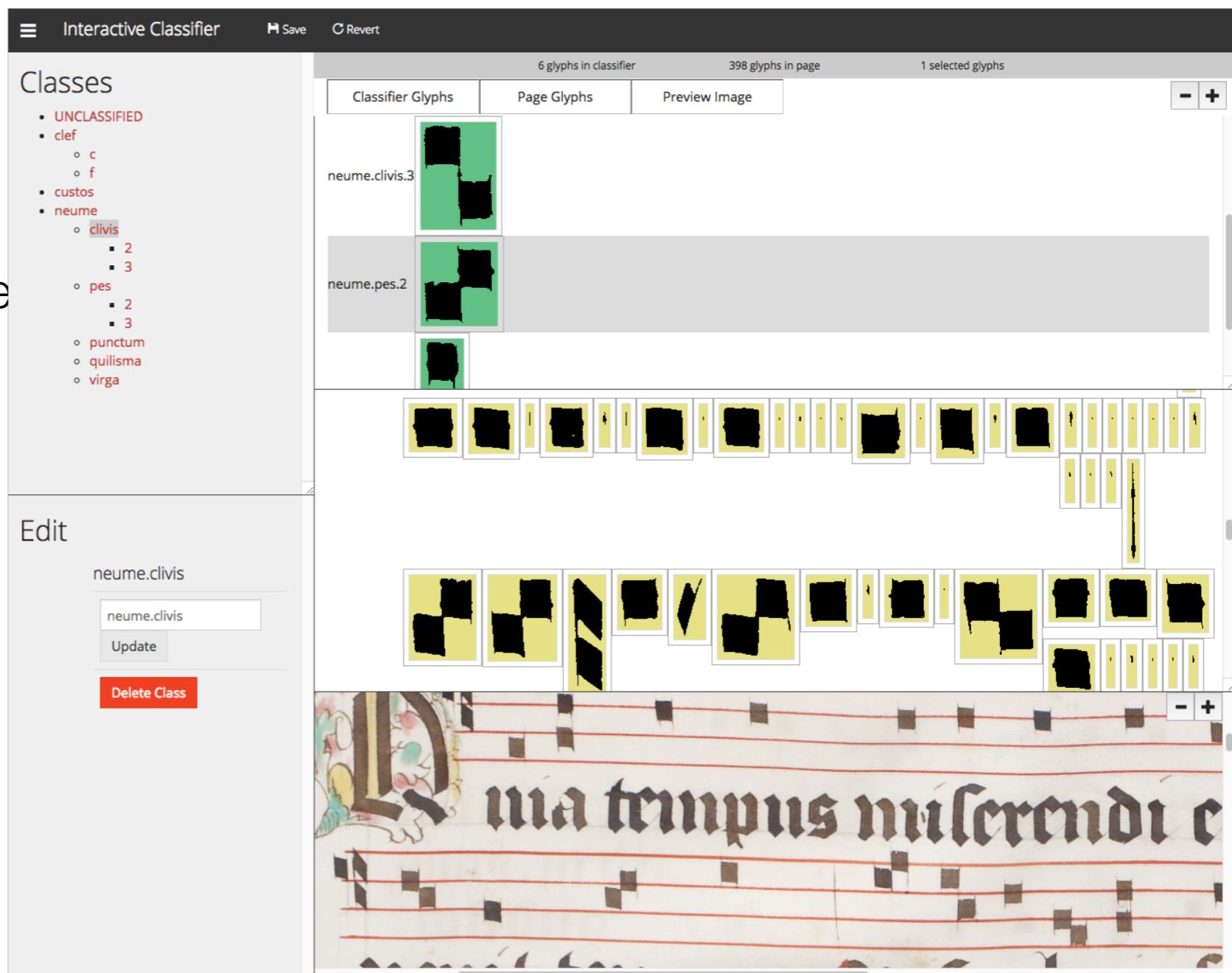


# Advantages Over a Complete Manual Classification

- Faster than solely manual classification
- Results improve in each iteration
- Can classify any type of symbols

# Recent Updates

- Delete & rename classes
- Import & export classes as a file
- Display preview image in color
- Save and revert
- Optimized zooming actions
- Collapsible panes
- Resize window



## Classes

- UNCLASSIFIED
- clef
  - c
  - f
- custos
- neume
  - clivis
    - 2
  - pes
    - 2
    - 3
  - porrectus
  - punctum
  - quilisma
  - virga

0 glyphs in classifier

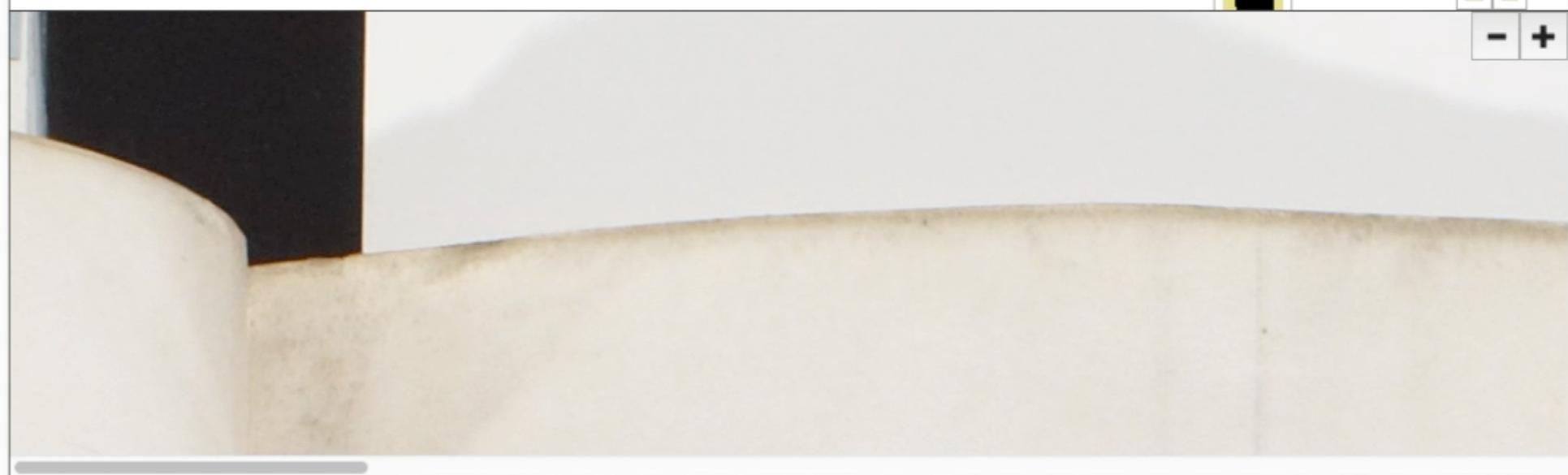
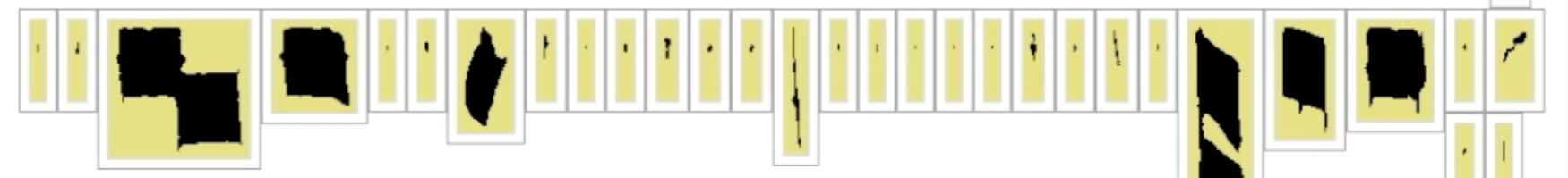
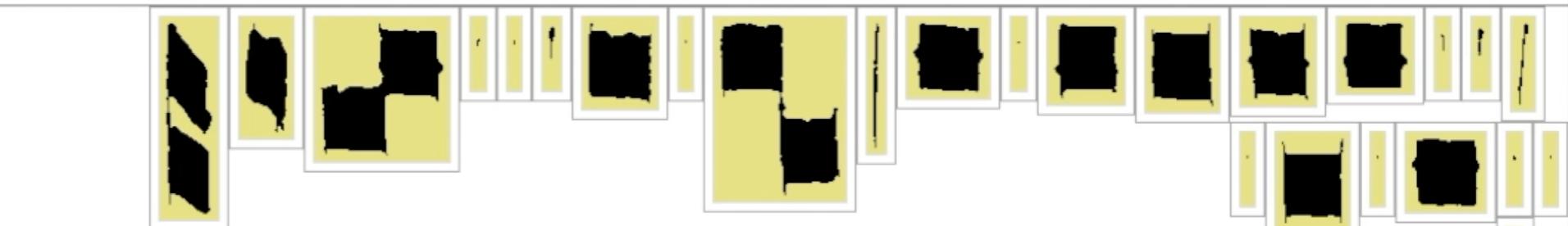
402 glyphs in page

0 selected glyphs

Classifier Glyphs

Page Glyphs

Preview Image



## Edit

Click on a Glyph to edit it.

# Future Enhancements

- Integrate Diva.js to render the preview image
- Increase compatibility with Safari
- Implement the classifier optimization as a RODAN job
- Implement more unit tests

# Thank you



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