

Neon2

Redesigning a web-based MEI neume editor

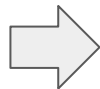
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Neon within OMR



- Document Segmentation
- Classifier
- Pitch Finding



Music Encoding Initiative



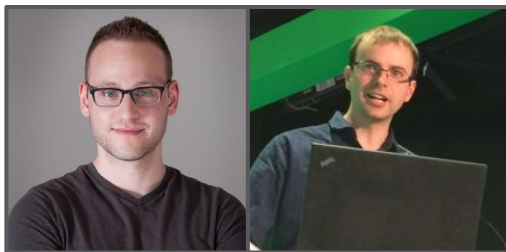
Layering in Neon

- Neon takes as input an MEI file and an image file
- Renders MEI data on top of the image
- Users can compare data against the original image and correct the MEI
- MEI file updates with every change made by the user



History

- Neon was started 6 years ago by Gregory Burlet and Alastair Porter
 - <https://github.com/DDMAL/Neon.js>
- This was the basis for Neon.js v1.0 released in summer 2017



Neon Versions

Neon.js	Original version developed in 2012 by Gregory Burlet & Alastair Porter, and continued by Andrew Tran and Zoé McLennan.
Neon2 (v2)	A web-app for viewing MEI 4 Neume files. Focus on accurate rendering using new functionality in Verovio.
Neon2 (v3)	Version 2 with features added for editing MEI files that are output by the OMR process.

Issues and Solutions

- Fabric.js not tailored to music notation
 - Replace with Verovio
- Only compatible with a very specific and deprecated type of MEI file
 - Use MEI 4.0
- Possible but difficult implementation as a Rodan job
 - Keep Rodan a top priority throughout development

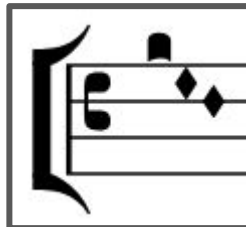


Neon2

MEI Versions

```
<staff n="1">
  <layer>
    <sb n="1"/>
    <clef line="3" shape="C"/>
    <neume name="climacus">
      <nc>
        <note pname="f" oct="3"/>
        <note pname="d" oct="3"/>
        <note pname="c" oct="3"/>
      </nc>
    </neume>
  </layer>
</staff>
```

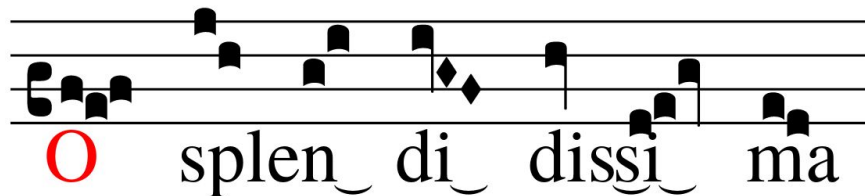
MEI-Neume Burlet
Neon.js



```
<staff n="1">
  <layer>
    <syllable>
      <syl>di_</syl>
      <neume>
        <nc tilt="s" oct="3" pname="f"/>
        <nc con="g" oct="3" pname="d"/>
        <nc con="g" oct="3" pname="c"/>
      </neume>
    </syllable>
  </layer>
</staff>
```

MEI-Neume 4.0
Neon2

Verovio Neume



- Renders neume groups dynamically based on **contour** of notes
- Exports in **SVG** format, integration with **web and Javascript libraries** available

Neon2

- Focus on accurate MEI-Neume rendering before editing features
- Built upon Node.js, Express, Pug, modern web technologies
- Uses Verovio compiled to Javascript to serve as the MEI renderer
- Highlighting musical elements by type

Neon2 Highlighting



- Highlight musical elements by MEI tag
- Support for staves, syllables, and neumes
- Aids user in correcting grouping errors

Editing Features

- Dragging, insertion, grouping, deletion
- Contextual options based on selection
- File updated with Verovio

The image shows a software interface titled "Edit" with a dropdown arrow. Below the title bar, there are four buttons labeled "Select By:", "Syllable", "Neume", "Neume Component", and "Staff". The "Neume Component" button is currently selected. Below these buttons are three more buttons: "Undo", "Redo", and "Delete". At the bottom, there is a section labeled "Change Head Shape:" followed by a dropdown menu labeled "Head Shapes". This dropdown menu is open, showing three options: "Punctum", "Virga", and "Inclinatum".

Neon2 in Editing Mode

The screenshot displays the Neon2 software interface in editing mode. The main area shows a medieval manuscript page with musical notation and Latin text. The text is written in a Gothic script, and the musical notation is in square neumes on a four-line red staff. A red cursor is visible on the staff, indicating the current editing position. The text on the page includes: "nū iesum dxi stum. Qui reformabit", "corpus humilita tis no stre configura", "tini corpori clari ta tis su e. v. l. a.", "obxi e et uiste et pie vinam? in hpc", and "seculi expectantes beatam spern et ad".

The interface includes a menu bar at the top with "Neon3", "File", and "Help". The right-hand sidebar contains several sections:

- Display**: Includes sliders for "Zoom" (set to 305), "Glyph Opacity" (set to 100), and "Image Opacity" (set to 100). There are also checkboxes for "Display Text" (unchecked), "Display Info" (checked), and a "Highlight - Off" dropdown.
- Insert**: Includes tabs for "Neume", "Grouping", "Clef", and "System". The "Neume" tab is active, showing four neume symbols: a square, a vertical line, a diamond, and a vertical line with a hook.
- Edit**: Includes a "Select By:" dropdown with options "Syllable", "Neume", "Neume Component", and "Staff". Below this are "Undo", "Redo", and "Delete" buttons. There is also a "Change Grouping:" section with a "Groupings" dropdown and an "Ungroup" button.

A small window titled "neume" is open at the bottom right, showing the shape "Porrectus flexus" and the pitch(es) "F2 D2 E2 D2".

Moving Forward with Neon2

- Officially release version 3.0.0
- Pull request to Verovio
- Integrate Diva.js into viewer
- Support for irregular staff lines
- Syllable text editing
- <https://github.com/DDMAL/Neon2>

Thank you!



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