GABRIEL J. SELZER

S O F T W A R E   E N G I N E E R

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EDUCATION

University of Wisconsin - Madison

M.S. Computer Science (4.0 GPA)	**expected May 2024**
B.S. Computer Science & Electrical Engineering, Certificate in German (3.97 GPA)	**December 2021**

PROFESSIONAL EXPERIENCE & PROJECTS

Laboratory for Optical and Computational Instrumentation (LOCI)   **August 2017 – Present**

Graduate Research Assistant ← Research Intern ← Student Programmer

Worked as a key member of the LOCI software team responsible for ImageJ2 and Fiji, open-source image processing applications written in Java with thousands of citations each year.

napari-imagej – Lead Developer *https://github.com/imagej/napari-imagej*

Enabled graphical interoperability between ImageJ and Python routines within napari, a data viewer built on Python.

- Implemented transparent, on-demand conversions between ImageJ data structures and NumPy/Python equals.
- Engineered asynchronous ImageJ2 initialization to avoid blocking napari's UI.

Impact: 182 installs – 20 GitHub stars – Communications paper published in Nature Methods, September 2023

SciJava 3 – Lead Developer *https://github.com/scijava/scijava*

Building an extensible, cross-language plugin framework in Java 11 as the future of the ImageJ2 application.

- Developed a unified syntax for function invocation across libraries and languages, including ImageJ and NumPy.
- Implemented a plugin discovery pathway

Impact: In Development, Release and working paper expected 2024

ImageJ2 - Core Developer https://github.com/orgs/imagej

Maintained the ImageJ2 and Fiji projects, applications powering open-source image processing in Java.

- Met weekly with other core and community developers in an advisory role
- Used Agile practices to address the needs of the ImageJ community.

Impact: 90+ pull requests adding additional features and bugfixes

PUBLICATIONS

Selzer, G.J., Rueden, C.T., Hiner, M.C. et al. napari-imagej: ImageJ ecosystem access from napari. **Nature Methods (2023)**. https://doi.org/10.1038/s41592-023-01990-0

Gahm NA, Rueden CT, Evans III EL, **Selzer G**, Hiner MC, Chacko JV, Gao D, Sherer NM, Eliceiri KW. "New Extensibility and Scripting Tools in the ImageJ Ecosystem." **Current protocols. 2021** Aug;1(8):e204. https://doi.org/10.1002/cpz1.20

SKILLS

Professional (5+ years): Java, Python, Git/GitHub, Eclipse, IntelliJ, VSCode, Markdown, Apache Maven, Qt, Vim

Academic (1+ years): Groovy, Tensorflow, MATLAB, HTML5/CSS, Javascript (Node.js), Bash, Apache Velocity, LaTeX, Jupyter Notebooks, Mathematica, Haskell, Rust, C/C++, CUDA, D3.js, Tableau, WebGPU, Flask, SQLite