Jan C. Brammer

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I have 5 years of experience in developing open source software for science and wrestling the complexity demon along the way. I strive to be a pragmatic generalist and I'm most happy when I get to write idiomatic, concise, functional(ish), and type-annotated Python that's easy to delete.

Experience

Software developer / RWTH Aachen University / 2021-present

I work on open source data-management tools for chemists under the umbrella of the NFDI4Chem initiative, collaborating with a distributed team of developers and chemists.

Chemotion ELN
An open source electronic lab notebook for chemists. While implementing new features, I conducted user interviews, analyzed and scoped requirements, wrote code, tests, and documentation. I also reviewed pull requests, improved and maintained our CI, and reduced technical debt by increasing test coverage, removing dead code, and refactoring parts of the codebase (the latter two being my favorite).

Technologies
Javascript, React, Ruby (on Rails), PostgreSQL, Docker, GitHub Actions, GitHub Copilot, VSCode

Links
https://github.com/ComPlat/chemotion_ELN

InChI & TUCAN
Open source identifiers for chemical molecules. These identifiers are to molecules what ISBN is to books. I developed an extensive test suite and CI for InChI, a legacy C library that is fundamental to commercial and academic chemistry. I also contributed significantly to moving InChI's development to GitHub. TUCAN is a prototype that addresses some of InChI's shortcomings for anorganic chemistry.

Technologies
Python (pytest, pydantic, ctypes, networkx), bash, SQLite, Docker, GitHub Actions, GitHub Copilot, VSCode

Links
https://github.com/IUPAC-InChI/InChI, https://github.com/TUCAN-nest/TUCAN, https://doi.org/10.1186/s13321-022-00640-5

Staff scientist / Radboud University Nijmegen / 2017-2021

I worked in research and development at the intersection of behavioral- and neuroscience. My tasks ranged from software development and data science to experiment design, and the publication of scientific articles.

Biofeedback application development
A virtual reality training to help Dutch police officers regulate acute stress. International, interdisciplinary collaboration of scientists, designers, game

developers, and police. I integrated heart and breathing sensor data into the application, ran extensive user tests, and analyzed requirements. I'm no longer on this project, but I keep maintaining the codebase as a personal project.

Technologies
PySide6 (Qt for Python), Redis, Bluetooth

Links
https://github.com/JanCBrammer/OpenHRV, https://doi.org/10.3389/fpsyg.2021.586553

Biopeaks
A graphical user interface for the interactive analysis of physiological sensor data. Our lab needed a tool to inspect, clean, and extract features from physiological data.

Technologies
PySide6 (Qt for Python), Python (numpy, scipy, pandas, matplotlib, pytest)

Links
https://github.com/JanCBrammer/biopeaks, https://doi.org/10.21105/joss.02621

Skills

- (open source) software development
- writing (e.g., technical documentation, scientific articles)
- conducting scientific studies (e.g., experiment design, data- acquisition and analysis)
- data science (e.g., wrangling, visualization, inferential statistics, basic predictive modelling)
- physiological sensor data (e.g., electrocardiogram, photoplethysmography, breathing)
- basic chemical informatics

Education

MSc Cognitive Neuroscience, Maastricht University, 2015-2017
BSc Psychology, Maastricht University & Concordia University Montreal, 2012-2015