Jan C. Brammer

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Scientist and open source software developer. Better software -> better science.

Experience

PhD candidate (staff scientist), Radboud University Nijmegen, 2017-present

I investigate how human physiological signals (heart and breathing) are linked to psychopathology and how they can be used to help people regulate acute stress. My tasks range from software development and data science to presenting and publishing scientific articles.

Education

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

Projects

biofeedback application development
repository | article

Integrated physiological sensor data in a virtual reality training environment for the Dutch police. International, interdisciplinary collaboration of police, game developers, designers, and scientists.

NeuroKit
repository | article

Implemented and maintain four core algorithms of one of the most popular open source software projects for physiological sensor data analysis. Remote, international, interdisciplinary collaboration of developers and scientists.

biopeaks
repository | article

Developed and maintain an open source graphical user interface for the interactive analysis of physiological sensor data. I used this project as a playground to seriously start working with packaging/deployment, continuous integration, and testing.

predicting psychopathology from physiological data
repository | article

Applying machine learning to investigate if physiological stress responses (heart signals and startle responses) predict the development of post traumatic stress disorder symptoms in police officers. Collaboration of neuro- and data scientists.

Skills

- open source software development
- data science (wrangling, visualization, machine learning, inferential statistics)
- physiological sensor data (electrocardiogram, photoplethysmography, breathing)
- real-time digital signal processing
- writing (e.g., technical documentation, scientific articles)
- experiment design

Technologies

- Python
- Kotlin
- version control (git, GitHub)
- continuous integration (GitHub actions, Travis)
- software testing (pytest)
- GUI development (Qt)
- database (Redis)