Vision, Optimization and Learning Group
Institute of Computer Graphics and Vision (ICG)
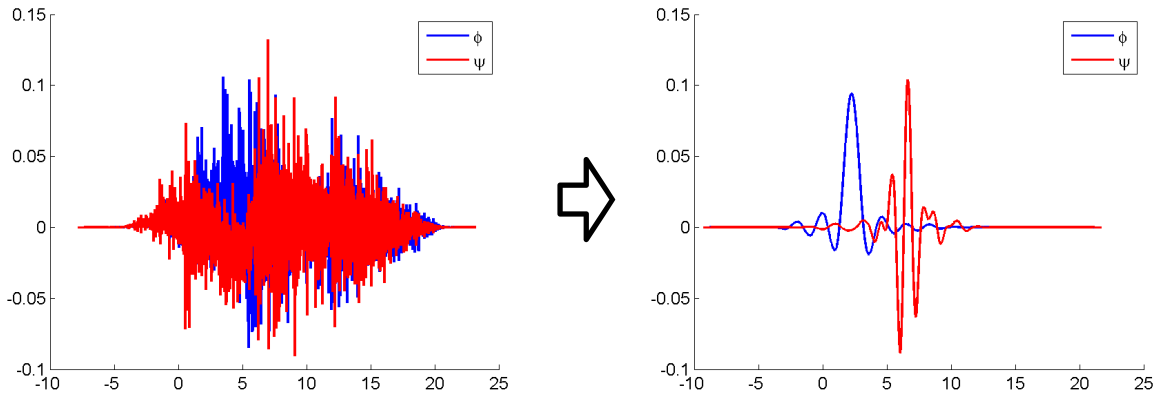*Graz University of Technology*

Parallel Projection of Wavelets

Masters' Project

Objective

Wavelets are powerful bases functions, able to describe oscillatory and textural behavior of signals and images respectively. In the discrete domain, they are realized by the means of a filter pair. A recent publication by the VLO group has shown that these filters can be learned from images, but mapping an arbitrary signal to a wavelet is a non-trivial task. The current implementation already exploits vectorization in numpy, but an efficient port to C++, with the possibility to project multiple wavelets at once, would be desirable.

What we want

- Student of Biomedical Engineering, Information and Computer Engineering, Computer Science or Software Engineering and Management
- Basic knowledge in C++ and linear algebra
- Interest in numerical optimization is an advantage

What we offer

- Get first practical experience in a linear-algebra tool of your choice (e.g. Numpy, Eigen, ...)
- Close collaboration with the researchers of the VLO group

Contact

Thomas Grandits
thomas.grandits@icg.tugraz.at

Homepage

Thomas Pock
pock@icg.tugraz.at

Homepage