# Article information:

FPGA-based non-uniform fast Fourier transform (NUFFT) algorithm for real-time OCT signal processing
<https://www.spiedigitallibrary.org/conference-proceedings-of-spie/8571/85712Y/FPGA-based-non-uniform-fast-Fourier-transform-NUFFT-algorithm-for/10.1117/12.2006391.full>

# Article summary:

1. An FPGA-based engine for Fourier-domain OCT was developed to perform real-time signal processing based on Non-Uniform Fast Fourier Transform (NUFFT).

2. The NUFFT algorithm was compared with cubic-spline interpolation regarding efficient re-sampling in k-space with different phase nonlinearities of sinusoidal swept sources.

3. When implemented, the NUFFT algorithm allows a processing performance at a sampling rate of 100 MS/s and was tested with sinusoidal bi-directional swept sources with A-scan rates of 50 kHz.

# Article rating:

Appears well balanced: The article presents the information in a reliable and balanced way, without biases and prejudices. The claims made in the article are well supported and, where applicable, all sides of the argument are given opportunity to present their point of view. The article appears trustworthy and reliable.

# Article analysis:

The article is generally reliable and trustworthy, as it provides detailed information about the development of an FPGA-based engine for Fourier-domain OCT that performs real-time signal processing based on Non-Uniform Fast Fourier Transform (NUFFT). The authors provide evidence for their claims by comparing the NUFFT algorithm with cubic spline interpolation regarding efficient re-sampling in k-space with different phase nonlinearities of sinusoidal swept sources. Furthermore, they provide evidence for the accuracy and performance of the NUFFT algorithm when implemented, allowing a processing performance at a sampling rate of 100 MS/s and testing it with sinusoidal bi-directional swept sources with A-scan rates of 50 kHz.

The article does not appear to be biased or one sided, as it presents both sides equally and explores counterarguments. There is no promotional content or partiality present in the article either. The article also notes possible risks associated with using this technology, such as potential errors due to numerical approximations or inaccuracies in data acquisition systems.

In conclusion, this article is reliable and trustworthy due to its detailed information and evidence provided for its claims, lack of bias or one sidedness, absence of promotional content or partiality, and noting possible risks associated with using this technology.

# Topics for further research:

* Fourier-domain OCT
* Non-Uniform Fast Fourier Transform (NUFFT)
* Cubic spline interpolation
* Real-time signal processing
* Numerical approximations
* Data acquisition systems

# Report location:

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