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The world is changing at an ever-faster pace. At the Johannes Kepler University Linz, we work on technologies and the ideas of tomorrow on a daily basis. At the same time, we educate over 23,000 young people to meet the demands of today's job market. In short, we are Upper Austria's largest institution for education and research. Are you interested in being a part of shaping the future at Austria's most attractive campus university?

We currently have an immediate master thesis opening for students (part-time employment, approx. 4-8 hours/week) in the field of signal processing for RF transceivers. The successful applicants will work in the Christian Doppler Laboratory for Digitally Assisted RF Transceivers for Future Mobile Communications, which is in co-operation with Apple B.V. & Co KG, and hosted jointly by the Institute of Signal Processing and the Institute for Communications Engineering and RF-Systems at Johannes Kepler University Linz.

Master Thesis in signal processing for RF transceivers in co-operation with Apple

Working Title:

Beyond FFT: Radar signal processing beyond conventional FFT

Content:

Joint Communication and Sensing is a new research topic of high interest. Its core idea is to jointly use one waveform to perform both communication and sensing at the same time. We further refine this approach to the scope of using existing communication signals to perform sensing tasks, such as range and velocity estimation.

The communication specific resource distribution in both time and frequency is of course only optimized to serve optimal communication purposes. However, this can lead to rather sparse or nonuniform distributed signal samples.

Special signal processing measures are needed to archive a decent estimation precision. To deal with this sparse or nonuniform distributed signal samples, new Fourier transform algorithms have to be tested and compared to achieve the best estimation result within a reasonable processing time.

This thesis includes:

- Radar signal processing
- Estimation theory
- Optional: Hands on experience in the laboratory with RF radar measurements

Contact:

For application, please contact co-supervisor: Michael Hofstadler, P +43 732 2468 6413, Email: michael.hofstadler@jku.at
(Will be supervised by Univ-Prof. DI Dr. Andreas Springer)