



## Project Proposal

### Smart Sensing for Off-Grid Error Reduction in Compressed Sensing Algorithms

**Supervisor:** Shahar Stein ([shahar-stein@campus.technion.ac.il](mailto:shahar-stein@campus.technion.ac.il))

Compressed Sensing is a novel family of algorithms that make use of a sparse structure of the signal to perform an effective recovery. This kind of algorithms make use of a "sensing matrix" to relate the measurements to the original signal. In many cases this sensing matrix is a grid matrix that take a continuous parameter on which the signal depends, such as frequency or angle, and discretizes it. However, in this case, a problem arise when the true parameter from which the signal was generated is "off the grid".

The project goal is to design a smart sensing matrix that reduce the possible implications of the off grid problem.

The project will include research next to matlab and will contain algorithmic aspect.

Required background: Introduction to Digital Signal Processing (044198)

