

Master's Thesis

# Applying Machine Learning on a Beamforming Equation

Beamforming is a method for directional signal transmission and reception. Beamforming works by combining antenna elements, such that at particular angles constructive interference amplifies the signal, while for other angles destructive interference attenuates the wave. We formulated an optimization problem to maximize the sum rate of a network containing multiple access points by finding the optimum beam angles. This problem is formulated mathematically. The goal of this work is to digitize the formula and to solve the optimization problem by simplifying the formulation.

## Prerequisites

- Python or Matlab programming experience
- Knowledge in optimization problems
- Knowledge in Sage or Gurobi (optional)

## Advisors

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