1 Situation

For the past years, data science has been increasingl
management companies, a lot of industry sectors are
the expansion of computer performance, we are abl
complex models. The volume of available, hence a
inference.
Often, when trying to find a model for data, we ha
n, small p situation. This is the most common typ
valuable tool to identify the dependencies across m
may be much larger than the number of observati
situation is called *small n, large p*. Traditional te
computational constraints.
In this thesis, we will focus on the *small n, large p*
high-dimensional regression in the Bayesian frame
problem, which often dissuades users from adopting

2 Motivation

Current technology allows us to numerically represe
study the influence of the genome on diseases or phe
variants, changes at specific locations on the geno
We will focus on the most common category of g
(SNPs), i.e., variations in the nucleotides that are
combinations of SNPs are inherited together, which