**Slide 1:** Hi everyone! I’m Boti, and today I’m excited to share my paper pitch with you. The paper I chose is titled *Feature Selection for Support Vector Machines via Mixed Integer Linear Programming*, a study by Maldonado, Pérez, Weber, and Labbé from 2014.

**Slide 2:** I would like to start with a look at the structure of my presentation.

**Slide 3:** My plan is to briefly cover some key concepts from the paper’s title. First, the *support vector machine* (SVM) classifier method—probably familiar to most of you. Then, I’ll touch on *feature selection*, a fundamental yet critical concept in machine learning. Lastly, I’ll introduce *MILP*, or mixed integer linear programming, which is perhaps the most mathematical of the three and may be less familiar. After covering these basics, my presentation will follow this structure: **Motivation** – The importance of this research and the problem it aims to contribute to. **Existing Methods** – A look at previously established methods in SVM feature selection, which is extremely important for the following part. **Proposed Methods** – The new MILP-based approaches introduced in this paper. Last, but not least **Results** – How these new methods perform in practice, and what insights were gained.

**Slide 4:** Now, let’s move on to the motivation behind this paper.

**Slide 5:** While this study may seem niche, it’s actually quite valuable. This is because SVMs are among the most popular ML models, especially amongst classifiers. Feature selection, in turn, is crucial, but choosing the optimal subset of features is an *NP-hard problem*—in other words, solving it is computationally intense. This paper’s goal is to propose competitive new methods for feature selection in SVMs using MILP to tackle this complexity.

**Slide 6:** Next, I’ll give you an overview of the methods discussed in the paper.

**Slide 7:** Unsurprisingly, they all relate to SVMs and fall into two groups. On the left are existing methods referenced and used in the paper, while on the right are the paper’s new approaches, *MILP1* and *MILP2*. These adapt two of the existing methods to work with mixed integer programming. All of these methods were tested on multiple datasets, but I’ll leave the outcomes as a teaser for my full presentation.

**Slide 8:** I hope this gave you a clear, concise overview of my topic—thanks for your attention!