

UNIVERSIDADE ESTADUAL DE CAMPINAS

Faculdade de Engenharia Civil, Arquitetura e Urbanismo

IC639: Métodos Numéricos para Engenharia Civil

List 3 Matrix Decompostion

Student:

Carlos Henrique Chama Puga - 195416

Advisors:

Porf. Dr. Philippe Devloo

Dr. Giovane Avancini

Campinas

2024

Contents

1	Introduction	3
2	The Full Matrix Class	3
	2.1 Class Implementation	3
	2.2 Matrix LU Decomposition	3
	2.3 Matrix LDLt Decomposition	3
3	The Sparse Matrix Class	3
	3.1 Class Implementation	3
	3.2 Storage Structure and Memory Usage	3
	3.3 Product Matrix Vector	3
4	Conclusions	3
R	eferences	3
A	GitHub Repository	3

1 Introduction

- 2 The Full Matrix Class
- 2.1 Class Implementation
- 2.2 Matrix LU Decomposition
- 2.3 Matrix LDLt Decomposition
- **3** The Sparse Matrix Class
- 3.1 Class Implementation
- 3.2 Storage Structure and Memory Usage
- 3.3 Product Matrix Vector
- 4 Conclusions

References

A GitHub Repository

The source code for this report and every code inhere mentioned can be found in the following GitHub repository: CarlosPuga14/MetodosNumericos_-2024S1.