

Mechatronics and Making

Mid Project Report

Exoskeleton Robotic Hand With

Wolf Claw Mechanism

Bryan Li¹ – SN 25003123

Yan Pei Zhu – SN 25001234

Nolan Yu – SN 25001234

October 31, 2025

Contents

1	Introduction	2
1.1	Project Objectives and Description	2
1.2	Similar Mechanisms	2
1.3	Industrial Applications	2
2	Mechanical and Mechanism Analysis	2
2.1	Drive Method and Transmission	2
2.2	Fingers and Wrist Mechanisms	2
2.3	Wolf Claw Mechanism Comparison	2
2.3.1	Version 1: Planetary Gear	2
2.3.2	Version 2: Compound Gear Train	2
3	Mathematical Modelling and Analysis	2
3.1	Fingers and Wrist Modelling	2
3.2	Wolf Claw Mechanism Version 1: Planetary Gear	2
3.3	Wolf Claw Mechanism Version 2: Compound Gear Train	2
4	Conclusion and Future Work	2

1 Introduction

1.1 Project Objectives and Description

1.2 Similar Mechanisms

1.3 Industrial Applications

2 Mechanical and Mechanism Analysis

2.1 Drive Method and Transmission

2.2 Fingers and Wrist Mechanisms

2.3 Wolf Claw Mechanism Comparison

2.3.1 Version 1: Planetary Gear

2.3.2 Version 2: Compound Gear Train

3 Mathematical Modelling and Analysis

3.1 Fingers and Wrist Modelling

3.2 Wolf Claw Mechanism Version 1: Planetary Gear

3.3 Wolf Claw Mechanism Version 2: Compound Gear Train

4 Conclusion and Future Work

References

[1] author. title. In editor, editor, *booktitle*, year.