



**COMPUTER AIDED DESIGN, ENGINEERING AND
MANUFACTURING OF BICYCLE BRAKE ARM**

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ABSTRACT

Chapter 1 is an introduction of bicycle brake arm and also CAD/CAM. In this chapter also the objective, scope of work, significant of project and methodology is explained. Chapter 2 is the story on theoretical analysis of bicycle brake arm while chapter 3 is about CAD/CAE/CAM of bicycle brake arm. In chapter 4, the comparison between theoretical analysis and finite element analysis is made. The steps involved in CNC manufacturing is explained in chapter 5. In chapter 6, discussion is made regarding to the result. Lastly, in chapter 7, conclusion highlighted our achieving from bicycle brake arm project while recommendation is made towards the improvement in future.

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CHAPTER 1 ,

INTRODUCTION

1.1 BACKGROUND

Early bicycles such as the high wheeled penny-farthing bikes had no brakes. Because of that there were many accidents and many of them fatal. In 1870s saw the development of the "safety bicycle". The braking system these bicycles used was often a simple leather pad which pressed against the top of the tire, which was driven by a rod attached to a lever on the handlebar, and there was no rear brake. After that the next big advance in bicycle braking, which came around the 1890s, was the invention of the rim brake. This is the type of brake most commonly used on bicycles today. [1]

Bicycle brake arm is essentially two pads press in a scissors like fashion against the side of rims, thus causing friction. Hence, bicycle can be stopped, slow down or keep it stationary.