

الآية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قال تعالى: "إِنَّ فِي السَّمَوَاتِ وَالْأَرْضِ لَآيَاتٍ لِّلْمُؤْمِنِينَ \* وَفِي خَلْقِكُمْ وَمَا يَبُثُّ مِن دَابَّةٍ آيَاتٍ لِّقَوْمٍ يُوقِنُونَ"

{ الجاثية 4-3 }

صَدَقَ اللَّهُ الْعَظِيمَ

## **DEDICATION**

We dedicate our dissertation work to our families and many friends. A special feeling of gratitude to our loving parents, whose words of encouragement and push for tenacity ring in our ears, they have never left our side and are very special. We also dedicate this dissertation to our many friends and families who have supported us throughout the process. We will always appreciate all they have done, especially for helping us develop our technology skills.

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## **Abstract**

Hundreds of Car theft are reported each year in Sudan, and the number is still increasing. If not recovered soon, stolen vehicles are generally sold, revamped or even burned if the resale price is considered too low. Once a vehicle is stolen, it becomes hard to locate it and track it, which considerably decreases the chances of recovering it. Nowadays, insurance companies suggest to their clients to equip their vehicles with a Global Positioning System (GPS) that can locate in real time their cars all over the country. In this work, we present the design and implementation of a Car Tracking Anti-theft System that protects and secures vehicles. This project consists of building two main components the first part hardware component this implements a geolocation system running on top of a Arduino microcontroller and the second part is software component. Using this geolocation, system will help in locating the car and tracing it fast in case it is stolen. This will increase the chances of recovering the car intact. In addition to tracking cars in real time and anywhere, the proposed solution aims at providing anti-theft features such as live tracking, tracing and proximity alerts as well as additional information about the vehicle.

## مستخلص

مئات السيارات تتعرض للسرقة كل عام في السودان، والعدد لا يزال في ازدياد. إذا لم يتم استردادها في وقت قريب ، يتم بيع المركبات المسروقة عموماً أو تجديدها أو حتى حرقها إذا كان سعر إعادة البيع يعتبر منخفضاً للغاية. ما ان السيارة سرقت، يصبح من الصعب تحديد موقع وتتبع ذلك، مما يقلل بشكل كبير من فرص استعادتها. في الوقت الحاضر، شركات التأمين تشير إلى عملائها لتجهيز سياراتهم مع نظام تحديد المواقع العالمي التي يمكن أن يحدد في الوقت الحالي مكان وجود سياراتهم في جميع أنحاء البلاد. في هذا العمل، نقدم تصميم وتنفيذ نظام تتبع السيارات لمكافحة السرقة التي تحمي وتأمين المركبات. ويتكون هذا المشروع من بناء جزء الأجهزة الذي يتم فيه تنفيذ نظام تحديد الموقع الجغرافي يعمل على رأس متحكم اردوينو باستخدام المتتبع الجغرافي، ونظام يساعد في تحديد موقع السيارة وتعبه بسرعة في حالة سرقة. هذا سيزيد من فرص استعادة السيارة سليمة. بالإضافة إلى تتبع السيارات في الوقت الحقيقي وفي أي مكان، ويهدف هذا البحث في توفير ميزات مضادة للسرقة مثل التتبع ، وتنبيهات القرب، فضلا عن معلومات إضافية عن السيارة.

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