Roccoo

AI-based Diagnosis device
for Malocclusion of teeth

Problem

Malocclusion of teeth

One common reason for pain in a tooth after you get a filling is that the filling isn't positioned quite right, and it's interfering with your bite. A too-high filling can cause malocclusion, preventing teeth from fitting together correctly when you bite down. Your dentist can adjust the height of your filling so you can bite down comfortably and efficiently. If a new filling or crown is too high, even if only very slightly, it can throw your overall bite out of alignment. It may hurt or feel too high when you clench your teeth, which is probably not in perfect harmony and should be adjusted.

Malocclusion also may be hereditary. This means it is passed down through families. It may be caused by a difference between the size of the upper and lower jaws or between the jaw and tooth size. It causes tooth overcrowding or abnormal bite patterns. The shape of the jaws or birth defects such as cleft lip and palate may also be reasons for a malocclusion.
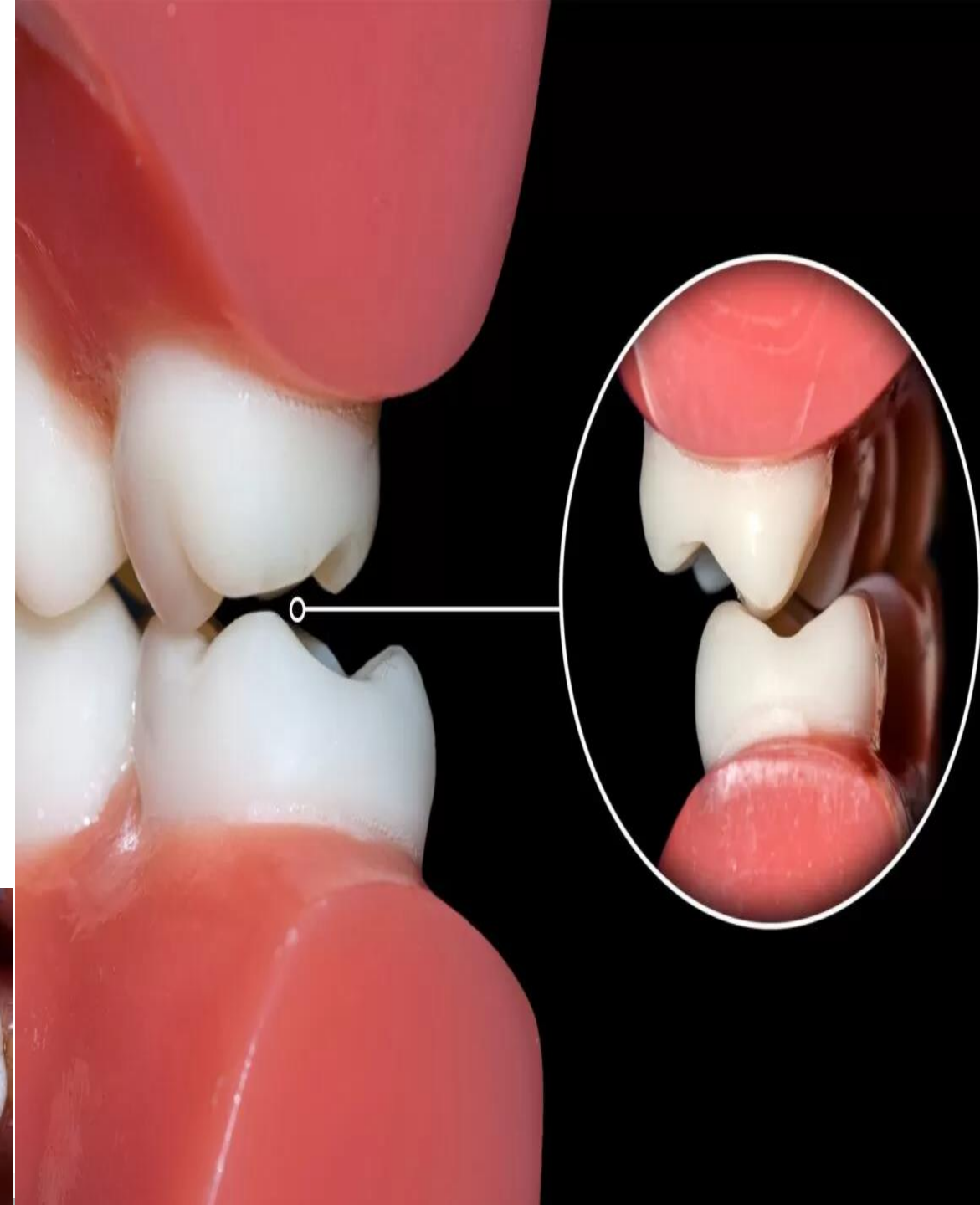
Problem

A dentist discovers most problems with teeth alignment during a routine exam. Your dentist may pull your cheek outward and ask you to bite down to check how well your back teeth come together. If there is any problem, your dentist may refer you to an orthodontist for diagnosis and treatment.

You may need dental x-rays, head or skull x-rays, or facial x-rays. Diagnostic models of the teeth are often needed to diagnose the problem.

And also another way to diagnose malocclusion is by using Dental articulating paper. Dental articulating paper is used as a diagnostic tool to identify the distribution of occlusal forces and highlight points of occlusal contact between the maxillary and mandibular teeth. the problem with articulating paper is that it does not describe occlusal forces or accurately measure the bite force in any quantifiable and predictable way.

Our Product, Our Solution

The company produces a micro wireless 360 Rotate Auto Tracking Panoramic camera with an AI diagnosis system to solve this problem. The camera should be inside the mouth with Springs on both sides. After opening and closing the mouth four times, the camera should scan the bite and how teeth are overlapped. The whole camera is placed in disposable plastic to maintain hygiene. After sending the images to the computer, the program shows the teeth height difference to the doctor at different times with the help of artificial intelligence.
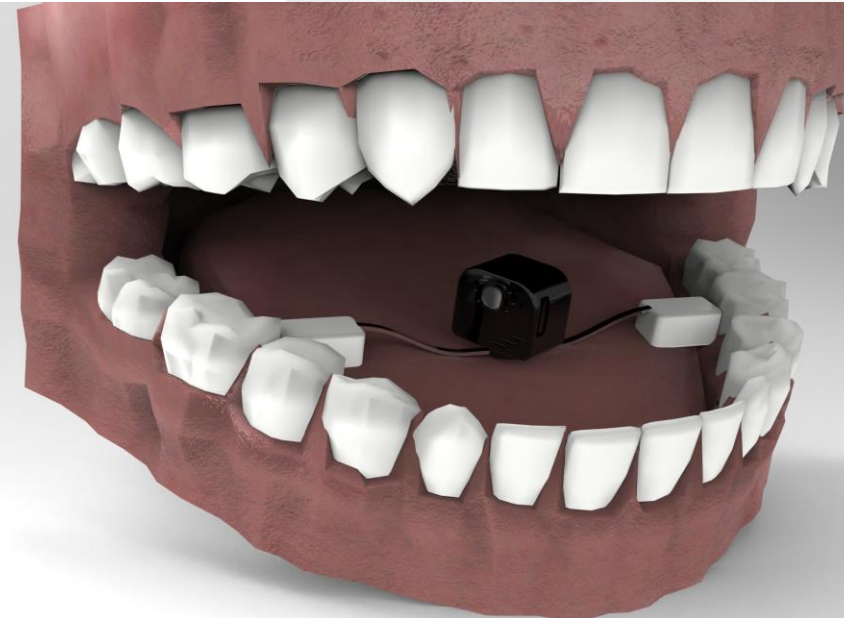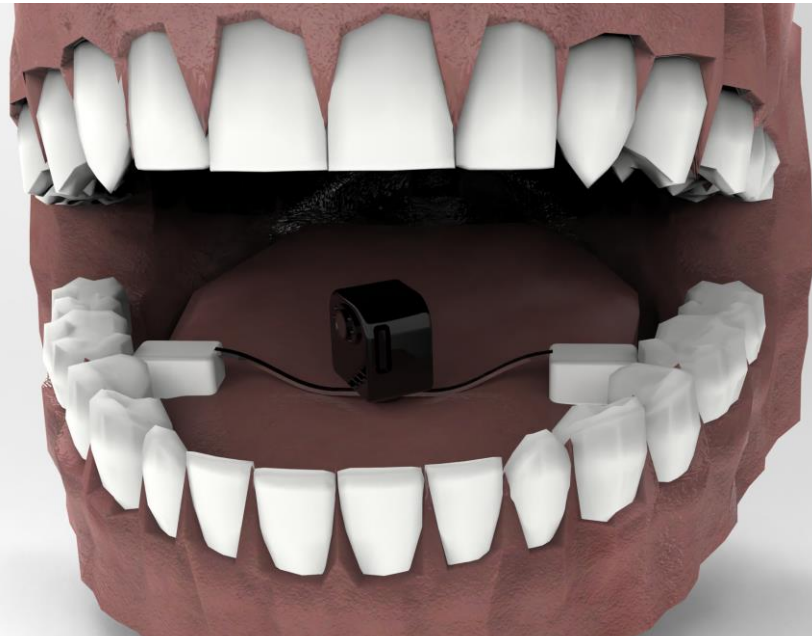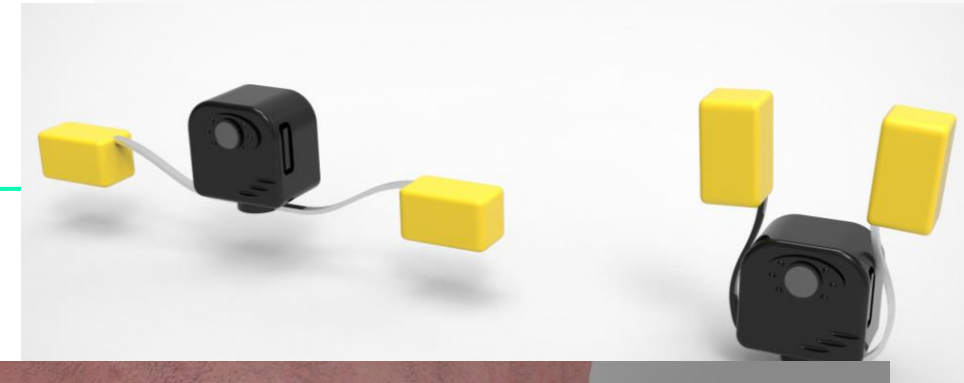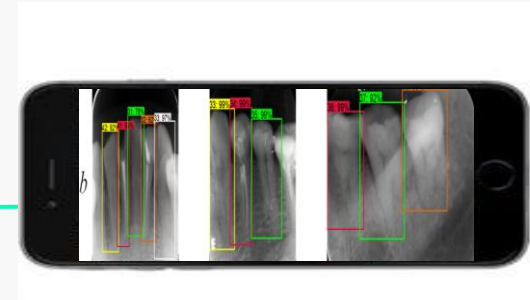
Our Product, Our Solution

This device can work in three categories of malocclusion

Class 1 malocclusion is the most common. The bite is normal, but the upper teeth slightly overlap the lower teeth. In this class, accruing mainly after dental filling, the dentist can use this device to solve the problem immediately after dental filling.

Class 2 malocclusion, called retrognathism or overbite, occurs when the upper jaw and teeth severely overlap the bottom jaw and teeth. In this class, the device can show the treatment process to the dentist to see the treatment progress.

Class 3 malocclusion, called prognathism or underbite, occurs when the lower jaw protrudes or juts forward, causing the lower jaw and teeth to overlap the upper jaw and teeth. In this class, the device can show the treatment process to the dentist to see the treatment progress.
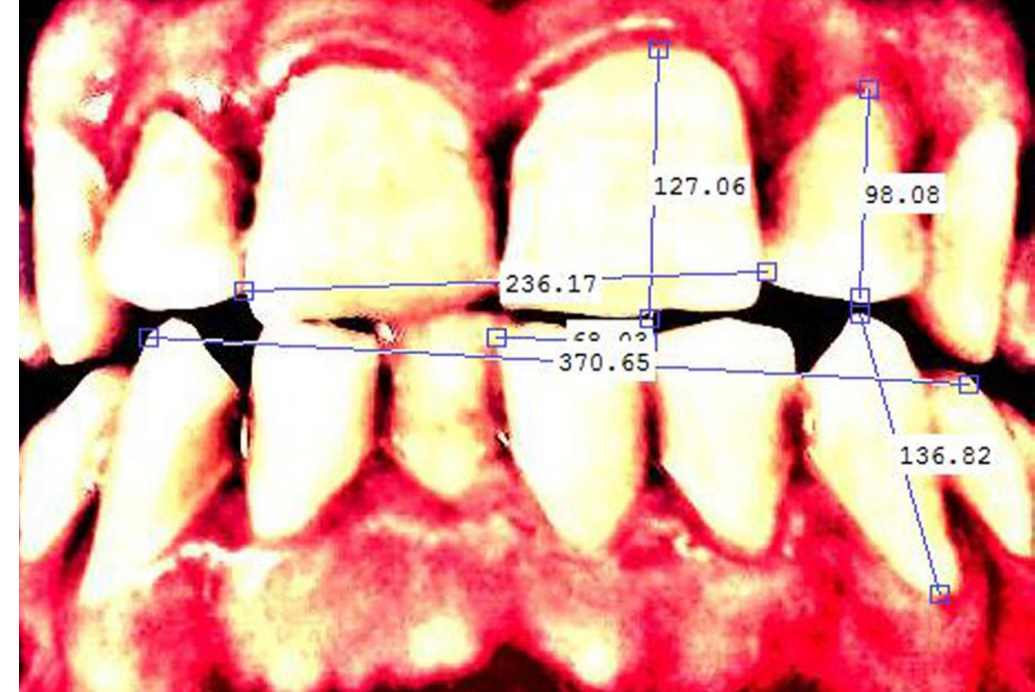
User Testing and Validation

The testing stage involves testing the Rocco product to verify that it works as intended. This includes testing the device's accuracy and precision, the scanning process's speed, and the scanner's compatibility with different dental software and hardware types.

We tested the dental scanner product with a group of users to evaluate its usability and identify potential issues or improvement areas.
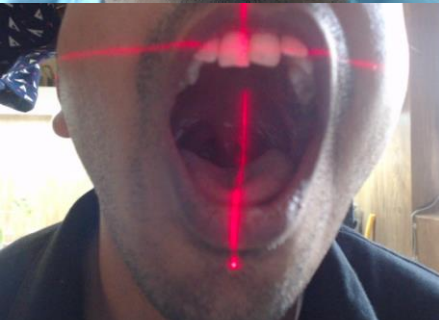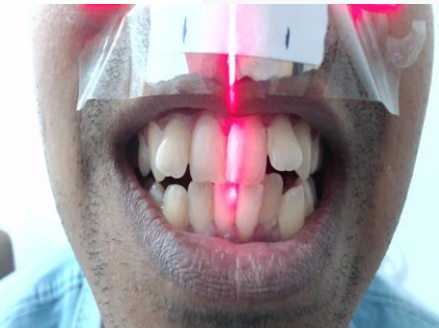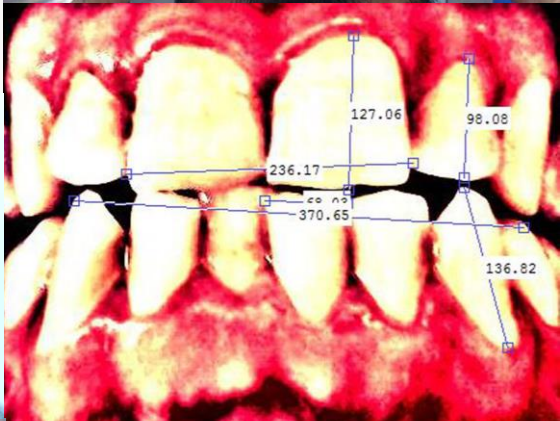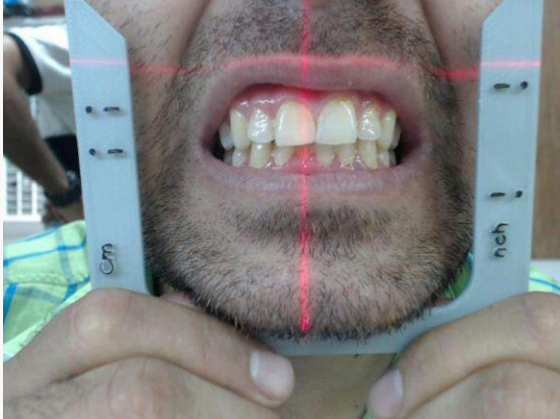
Comparison

Advantages

1- It is smart and can be installed on a computer.

2- Eliminates the high costs of x-ray and Dental articulating paper diagnostic models.

3- more efficient and accurate.

4- It can take pictures of all parts of teeth.

Innovations

- 1- With the help of artificial intelligence, it simulates the teeth and determines their size difference from inside the mouth.

- 2- With the help of artificial intelligence, it learns more every day to analyze the movement of the teeth when placed together with the many photos it takes.

- 3- This program can report the movement of the jaw at different moments

Market Size

in private dentist offices. The remaining 5% is covered by proviThe global dental diagnostic and surgical equipment market size was estimated at USD 6.2 billion in 2020 and is expected to expand at a compound annual growth rate (CAGR) of 8.2% from 2021 to 2028. The market is likely to be driven by technological advancements such as the introduction of CAD/CAM technology and 3D imaging. North America dominated the dental diagnostic and surgical equipment market and accounted for the largest revenue share of over 38.0% in 2020. According to a study conducted by the Canadian Academy of Health Sciences (CAHS) in 2014, high costs are a big worry. Canada's most vulnerable residents have the highest rates of toothache, decay, and disease; nonetheless, they have restricted access to much-needed healthcare amenities. Publicly financed healthcare systems pay the cost of therapy at hospitals and the majority of surgeon services. According to the Canadian Academy of Health Sciences (CAHS) report 2014, consumers pay for 95% of dental treatment out of pocket or through private dental insurance delivered ncial and federal public health insurance designed to support the most vulnerable people.

Target Market

The target market would primarily be orthodontists, dentists, and other dental healthcare professionals who specialize in diagnosing and treating malocclusion. These devices can also be used in dental clinics, hospitals, and other healthcare facilities where patients are screened for orthodontic problems.

Market Growth Analysis

straits
research

Competitors

Product	Bite analysis/ scanning inside of the teeth in biting positions	Suggestion about how to fix the problem	Reporting in the process of treatment	Scanning the teeth	checking all parts of mouth up	AI embedded control system
Roccoo	✔	✔	✔	✔	✔	✔
Traditional Diagnosis Methods					✔	
Cone Beam CT Scanners				✔	✔	
Intraoral Cameras				✔	✔	

Sale Strategy

The sales strategy of Rocco would likely involve a combination of traditional sales and marketing tactics as well as more targeted approaches to reach potential customers.

1. **Trade shows and conferences:** Participation in relevant trade shows and conferences to showcase the device and its capabilities can help attract potential customers and generate interest in the product.

2. **Direct sales:** Sales teams can target dental healthcare professionals such as orthodontists, dentists, and dental hygienists directly with product information and demonstrations.

3. **Online marketing:** Online marketing can include creating a product website, social media campaigns, targeted advertising, and email marketing to reach a wider audience.

4. **Key opinion leaders:** Identifying key opinion leaders in the orthodontic and dental healthcare industries to endorse the product and share their experiences can help build trust and credibility.

5. **Distribution partnerships:** Partnering with distributors and resellers can help reach a broader market and increase product visibility.

6. **Free trials and demos:** Offering free trials and demonstrations of the product to potential customers can help build trust and familiarity with the product.

7. **Customer support:** Providing excellent customer support and service can help establish the product as a reliable and trusted solution for malocclusion diagnosis.

Team

Mahla Esfahaniani

Director of Research and Development.

She has a Doctor of Dental Surgery. She is working and developing products and technology.

Mostafa Alizadeh

Director of Operation

He has a bachelor's degree in electronic technology engineering and over twenty years of experience in companies' processes and production lines. He monitors revenue margins, and research and implement new business growth and prosperity directives. He has experience in AI and Programming.

Reza Astadabadi

Chief Executive Officer

He has a master's degree in business economics. He is responsible for expanding the company, driving profitability, and managing the company's overall operations.

Thank You

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