THE TECH BEHIND THE SHIELD

CHIMALI

Monitoring Accounts for Children's Safety:
AI, Data, & Technology

ABOUT OUR PROJECT

21st-century students have experienced the emergence of remarkable digital technologies that have transformed the way they navigate the world, both positively and negatively. While on the one hand, they can collaborate on projects and access an unprecedented amount of information, they are also more susceptible to both perpetrating and experiencing digital abuse. Moreover, the development of digital technologies has accelerated the evolution of language, requiring corresponding advancements in speech and writing. Artificial intelligence and machine learning offer a means of keeping up with these developments, particularly in safeguarding students from the harmful aspects of the online world.

> **"CHIMALI is leading the development of specialized natural language processing systems in Spanish."**

CHROME EXTENSION

CHIMALI's monitoring service offers a specialized browser extension designed for Google Chrome, which is commonly LATAM's most used default browser. Our extension enables CHIMALI to monitor these browsers and devices with the same proficiency level as the wider Google Workspace account. A built-in monitoring extension for Chrome is extremely advantageous as students can't easily log out of Google Workspace or Office 365 accounts. Still, they generally can't circumvent monitoring service because the browser is integrated into the device when using Chromebooks. In addition, our service provides functionalities such as account-level monitoring, tracking URLs, page titles, and web searches.

GOOGLE WORKSPACE

- Gmail: Subject, Body, Attachments (Images and Videos).
- Google Chat: Text and Attachments (Images and Videos) in Direct Messages ·
- G Drive: Photos, Videos, Office documents (.doc, .docx, etc.), Plain Text Files · Google Docs: Content, Comments, and Replies

MICROSOFT 365 (COMING SOON)

- Outlook: Subject, Body, Attachments (Images and Videos).
- OneDrive: Photos, Videos, Office documents (.doc, .docx, etc.), Plain Text Files.
- Teams: Text, Images, and Videos in Direct Messages

"We created CHIMALI Guard extensions with a strong conviction that the cost should not impede student safety."

DATA & TECHNOLOGY OVERVIEW

DATA STEWARDSHIP

Parents, caregivers and schools have complete ownership of all student data, and they also have the authority to determine the extent of monitoring. At CHIMALI, we recognize that there is no universal solution for ensuring school safety. Hence, granting each school the autonomy to manage data and monitoring enables them to decide what works best for their unique institution.

DATA LABELING

We plan to make a significant investment in building a strong data labelling team; assessed by consultants like Mechanical Turk. This team will have the capability to accurately label tens of thousands of data points daily. The labelled data will then be incorporated into a data ingestion process that will be trained on a daily basis. Our dedication to this process will empower us to keep up with the evolving nuances of language and maintain the agility to adapt quickly to new topics and phrasings encountered during student conversations.

Accurate classification of conversations heavily relies on context. In the absence of context, computers struggle to differentiate between a joke and a serious message. However, thanks to recent advancements in modern machine learning, we can now use advanced Deep Learning techniques to internalize contextual cues, enhancing our ability to detect potential issues in a piece of text. Our Neural Network is built on custom word embeddings to improve our comprehension of variations in children's language, and we employ a multi-label approach that enables us to utilize triggers from one type of abuse to detect another. This combination of approaches, trained on billions of data points, has led to the creation of a constantly improving natural language processing (NLP) system.

It's worth noting that the Spanish language, spoken widely across the world, varies greatly from region to region, making it crucial to incorporate regional variations into our NLP system.

Web Browser Sessions

Our web browser sessions are secured with SSL encryption and authentication, ensuring that all information transmitted between web servers and browsers remains entirely confidential. These transfers are impervious to intrusion without a distinct cryptographic key that is exclusively issued by a Certificate Authority. To guarantee the integrity of our certificate, we are searching for a solution that uses the SHA-2 hashing algorithm, making it impracticable for anyone to modify or counterfeit our certificate. Any such endeavour triggers an error, and access is denied, thwarting any attempts to establish a secure connection.

We are assessed by INAI "Instituto Nacional de Transparencia, Acceso a la Información y Protección de Datos Personales," which is the National Institute for Transparency, Access to Information and Personal Data Protection in Mexico. This partnership allows us to build our framework in a lawful ethical manner.

National and International regulation.

Our goal is to comply with various laws and regulations, including CIPA, COPPA, FERPA, GDPR, and all relevant Latin American regulations. If you want to learn more about this topic, we recommend reviewing the report authored by our CEO, Victoria Martin del Campo, for the Inter-American Development Bank:

"Aprendizaje en línea seguro: políticas y gobernanza para la protección de datos de los estudiantes en América Latina"

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