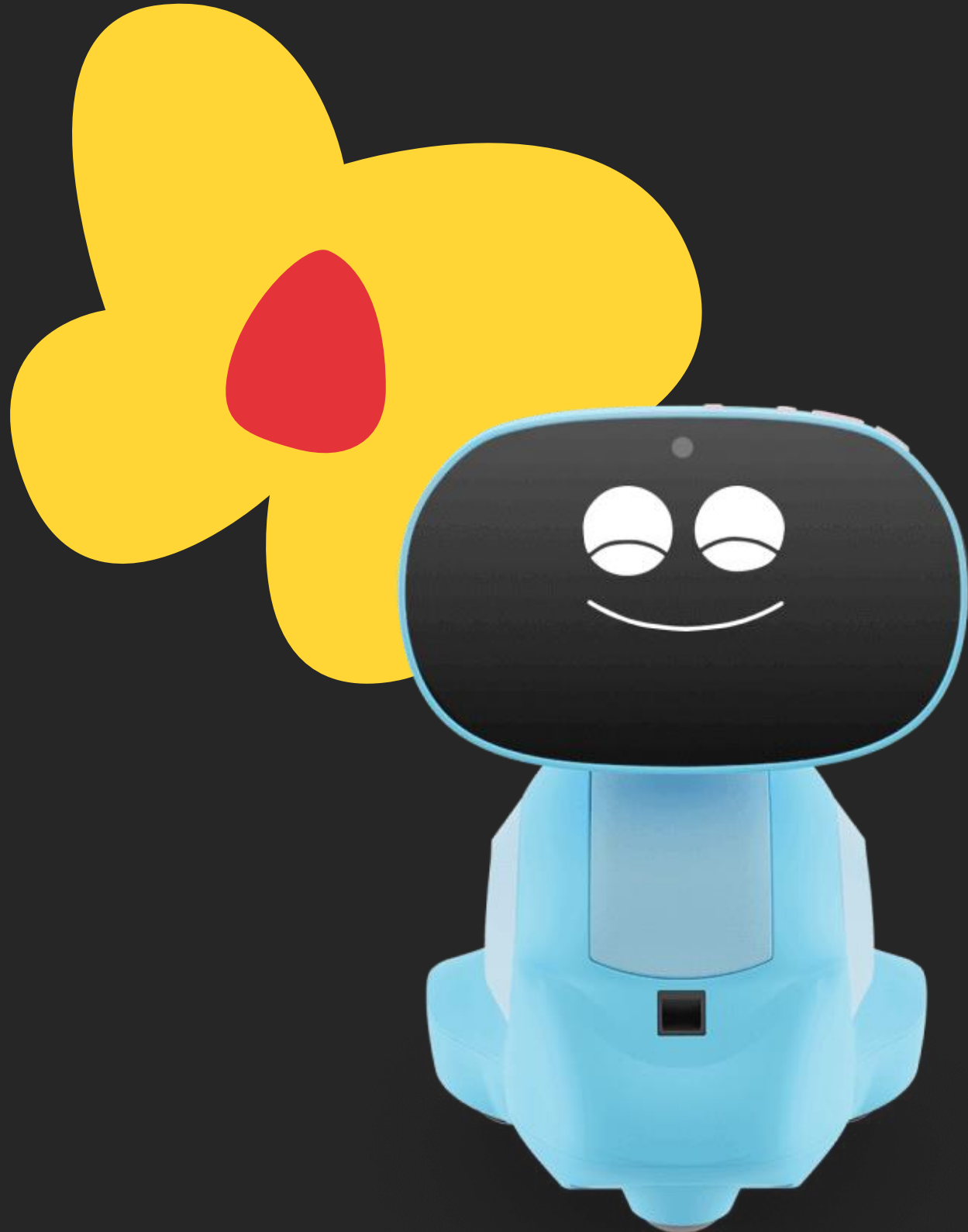# MYBABY.AI

Making learning fun

COMPANION ROBOT FOR KIDS

Teaching kids through toys

Purpose – Interactive companion for the child that learns, develops, assists the child in skill development, identify interests & aptitude, monitor growth & development and archives golden memories of childhood

CONTENTS OF THE REPORT

TECHVANTAGE
ANALYTICS FOR AN INTELLIGENT WORLD

INTRODUCTION

The concept is to develop a robot companion for children that uses machine learning and artificial intelligence to process and respond to natural conversation and facial expressions of children.

Baby.ai would be an "animate companion" designed to help children between the age of 1 and 5 develop their social, emotional and cognitive skills through play-based learning.

Baby.ai would make learning fun and easy with its AI-powered brain and supportive personality. Housing a wide range of academic opportunities, an all round child development and companion, it would also capture and archive the golden memories of childhood.

TARGET MARKET & AUDIENCE

- Target Market : USA

- Target Consumer: Children in the 1 to 6 years age group

- Target Customer: Parents / Primary Caregivers

PRODUCT FEATURES

1 VOICE OPERATED

Respond to basic voice commands for operational functions (movement, play media, capture moment etc)

2 CONTENT MODERAITON

Ensure the media played (games,music,stories etc) is age and socially appropriate (gender neutral, unbiased, respecting diversity etc).

3 AUTO CAPTURE

Auto capture significant moments(birthdays), moments of achievement (first walk,talk etc), memories with parents and close ones.

4 PROJECTOR DISPLAY

Play captured videos/photos/visual media through an inbuilt projector on a wall/screen.
Mybaby.ai will also house an inbuilt speaker for audio media.

5 DATA PRIVACY

Mybaby.ai would store all data within it's inbuilt memory stick. No data would be stored online or on cloud. Updates to the bot will be App driven and choice driven. Parents would be notified in case an update is available.

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ANALYTICS FOR AN INTELLIGENT WORLD

PRODUCT FEATURES

6 AUTO LEARNING

Learn the child's actions and mimick the same in a fun manner. (ex: expressions, movement)

7 MOBILE APP DRIVEN

Baby.ai would be entirely app driven with parental controls and options to set restrictions.

8 ALERTS

Send alerts to the mobile App in-case the child is physically hurt, in danger of getting hurt or the child goes beyond a certain radius (>100m for ex).

9 CONNECTED KIDS PORTAL

A companion portal for kids with additional games and activities to be dowonloaded on the bot through the App.
The portal would serve to build a community around all Baby.ai users, organize parenting sessions, fun competitons etc.

10 FACIAL EXPRESSIONS

Mybaby.ai would have a screen for a face that would express emotions in response to the child's activities. This would

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PERSONALITY DEVELOPMENT FEATURES

2 EMOTIONAL SKILLS

Baby.ai will use mindfulness techniques ex: breathing exercises which help children learn to regulate difficult emotions one breath at a time, and meditations, which take children through visualization exercises to learn how to calm down and focus. It'll support emotional skills by encouraging open dialogue about how children are feeling so they learn to identify and vocalize their emotions - happy and excited or sad and lonely. This dialogue allows children to practice sharing and can foster more open communication at home.

1 RELATIONSHIP SKILLS

During an unprecedented time of remote learning and increased isolation, baby.ai would help children practice essential social skills at home. Using advanced conversational technology, it'll engage in open conversation, complete missions that promote communication, listening, turn-taking, and other crucial relationship skills.

3 CREATIVITY

Unstructured play such as creative drawing activities and imagination building help develop original thinking. Baby.ai will encourage creative movement through fun activities such as dancing.

4 SELF-CONFIDENCE

Baby.ai would provide a safe space for children who may struggle with communication and socialization. A child's role as a mentor to Baby.ai will provide a sense of responsibility and will help them build self-confidence. It'll invite children to recite positive affirmations. By repeating positive affirmations such as, "I am brave," and "I am strong," children get in the habit of replacing unhelpful and negative thought patterns with productive and empowering ones, and that helps build confidence, resilience, and self-esteem!

5 CRITICAL THINKING

Baby.ai would support the development of critical thinking skills through open-ended conversations that encourage interpretations, inferences, explanations, comparisons, and problem-solving, through games, music, rhymes and interactive child friendly techniques.

6 SCREEN-FREE PLAYTIME

Baby.ai would engage children in playtime through conversation and joint activities. Instead of passively staring at a screen,children will be encouraged to actively engage with Baby.ai in daily activities that focus on discussion and creative play such as drawing and skill-building games. Caregivers can stay connected and informed through a companion parent app that'll provide insight to the child's progress with Baby.ai, as well as expert tips(live support) to further support your child's learning goals.

7 SPEECH DEVELOPMENT

Baby.ai would promotes early literacy skills (e.g., letter/sound corresponded, letter knowledge), articulation of specific sounds and building vocabulary of simple everyday words, numbers, colors etc. The Mybaby.ai app should track the progress of speech and articulation development of the child and update them in periodical reports.

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PRODUCT DESIGN

The product should be build keeping these 5 major design points in purview.

- Material should be non-toxic, child & eco friendly.
- The robot should have no sharp edges.
- The bot should have an optimal weight (within 1.5 kg)
- The bot should have a smooth locomotion.
- Self balancing feature to resist push/pull by children.
- The audio output should have a balanced signature with loudness <60 db.
- The digital face of Mybaby.ai will be a simple monocrome screen to prevent exposure to harmful screen Blue light.

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SENSORS

- Wide-angle HD camera
- Dual MEMS Microphones (minimize distortion)
- Time Of Flight Range Sensor
- Odometric Sensors

HARDWARE

- Wide-Angle High-Resolution IPS Display
- High Performance Speakers
- Rugged ABS Plastic Body
- Rubberized Wheels

SAFETY COMPLIANCES

- ASTM F963
- CPSC compliance
- CPSIA
- EN71

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AESTHETICS

The target audience for Baby.ai is children of the ages of 1-6 yrs of age.

Keeping the target audience in mind the overall color theme for the product should be a single/dual light tone. Bright/loud colors would be a strain for their eyes. (refernce : Fisher Price toys).

The physical shape of Mybaby.ai should have as much sphreical surface as possible. (round shapes resemble friendliness.)

COLOR SCHEME

- Single/dual light tone.
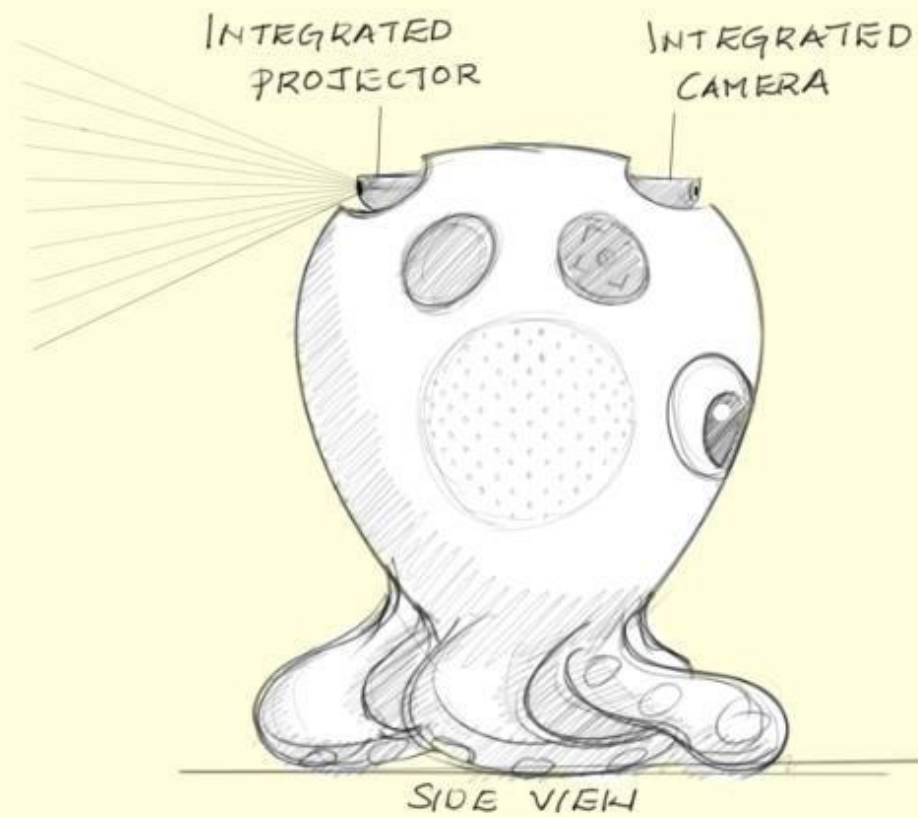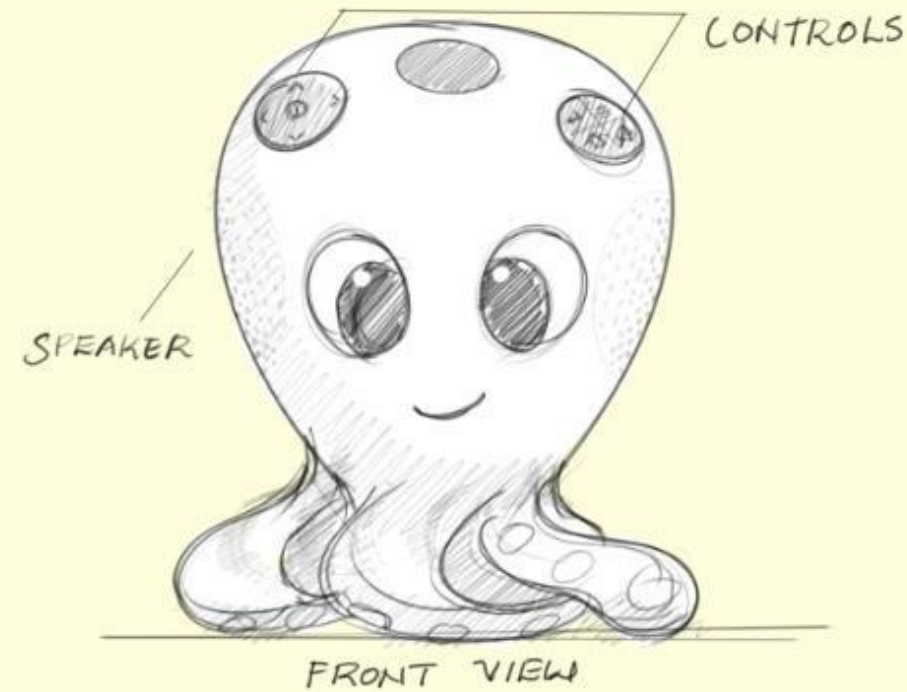- The color tone should be gender neutral

- Overall rounded/spherical/teardrop shape wherever possible.

SHAPE

VOICE

- The voice signature of Mybaby.ai would be that of a child to make it sound friendly.

CONTROLS

SPEAKER

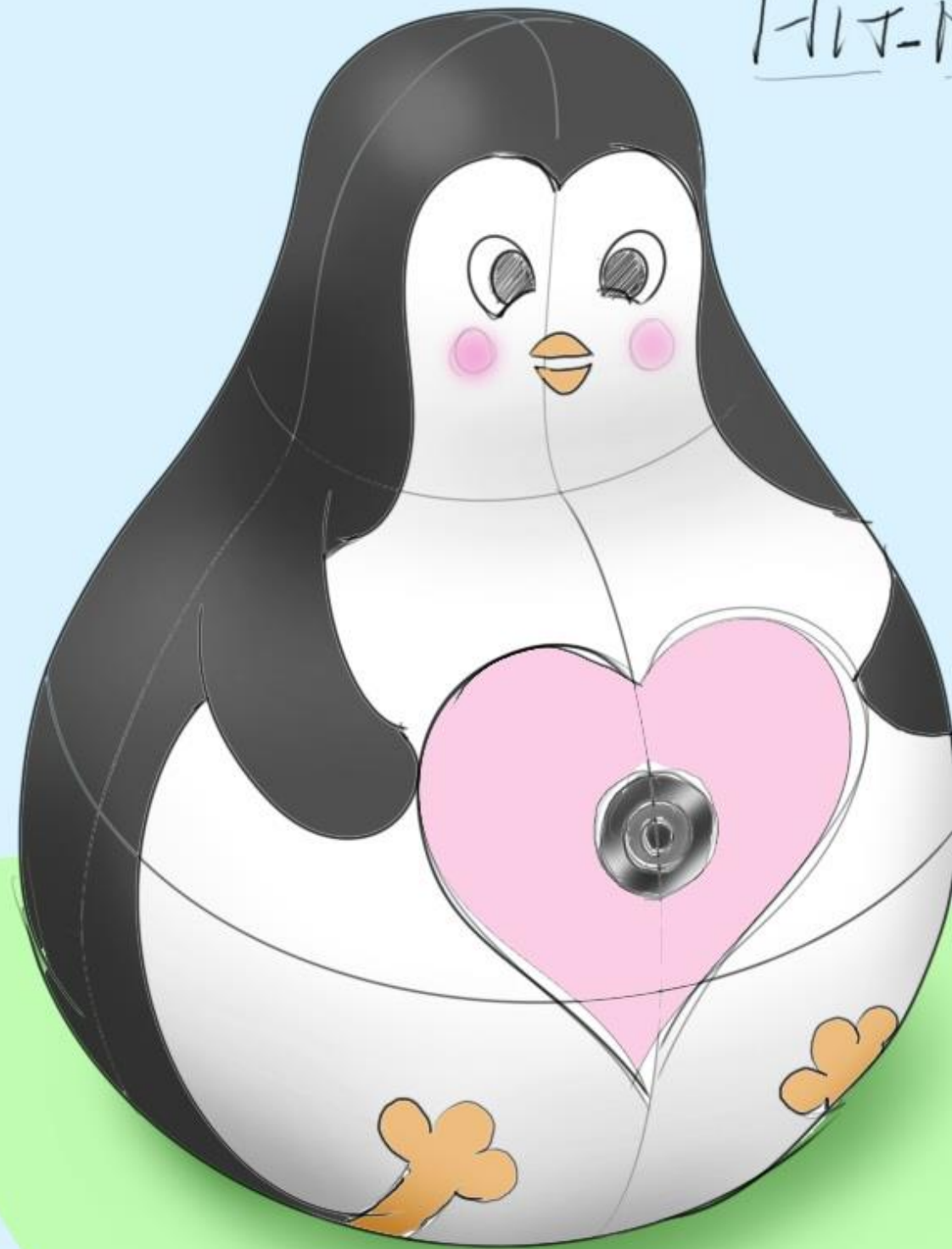FRONT VIEW

INTEGRATED PROJECTOR

INTEGRATED CAMERA

SIDE VIEW

TOP VIEW

OPENING MECHANISM FOR CAM & PROJECTOR

HIT-ME TOY CONCEPT

CAMERA

LIGHT WEIGHT MATERIAL

HEAVY MATERIAL

CENTRE OF GRAVITY (COG)
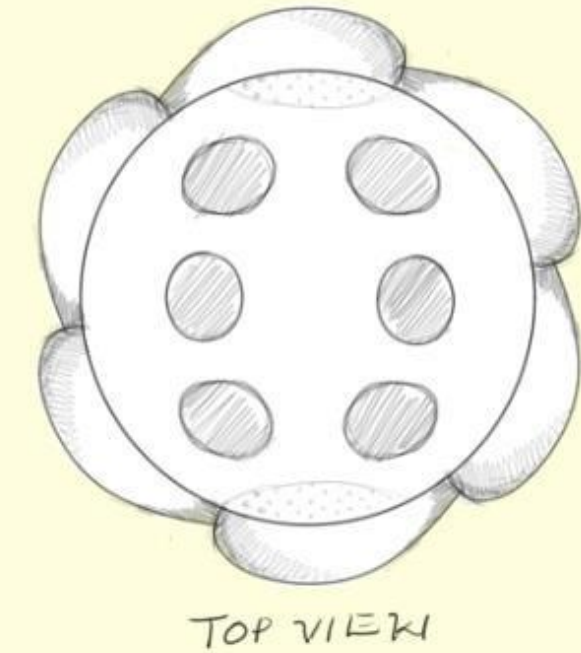
THE TOY IS IDENTICAL ON BOTH THE SIDES WITH CAMERA ON ONE SIDE AND PROJECTON ON THE OTHER
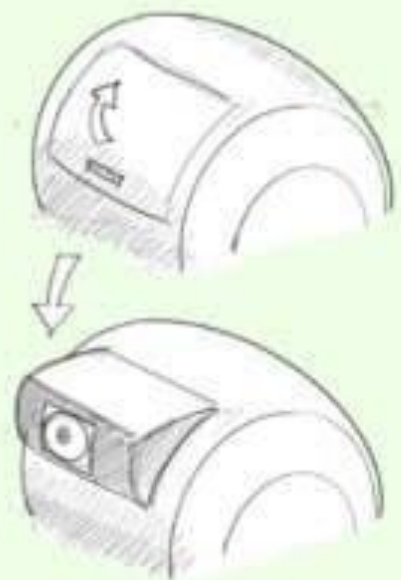
HIT-ME MECHANISM
THE LOWER COG OF THE TOY ALLOWS IT TO BE BACK IN STABLE NORMAL STATE
THE LOWER COG IS ATTAINED BY PLACING ALL HEAVY COMPONENTS LIKE BATTERY, SPEAKER TO THE BOTTOM.
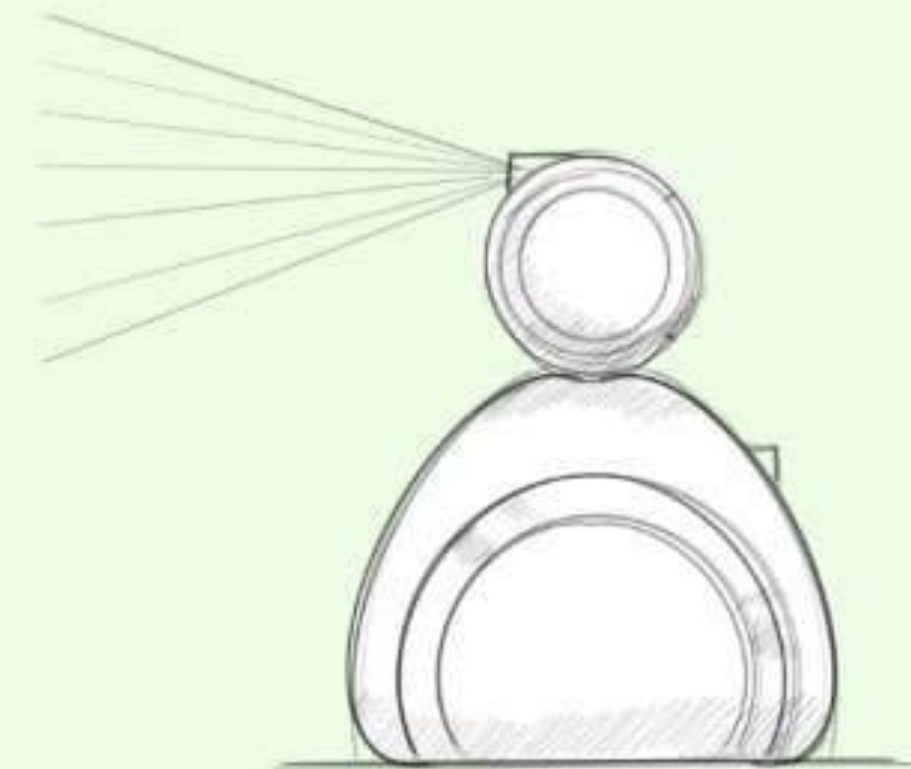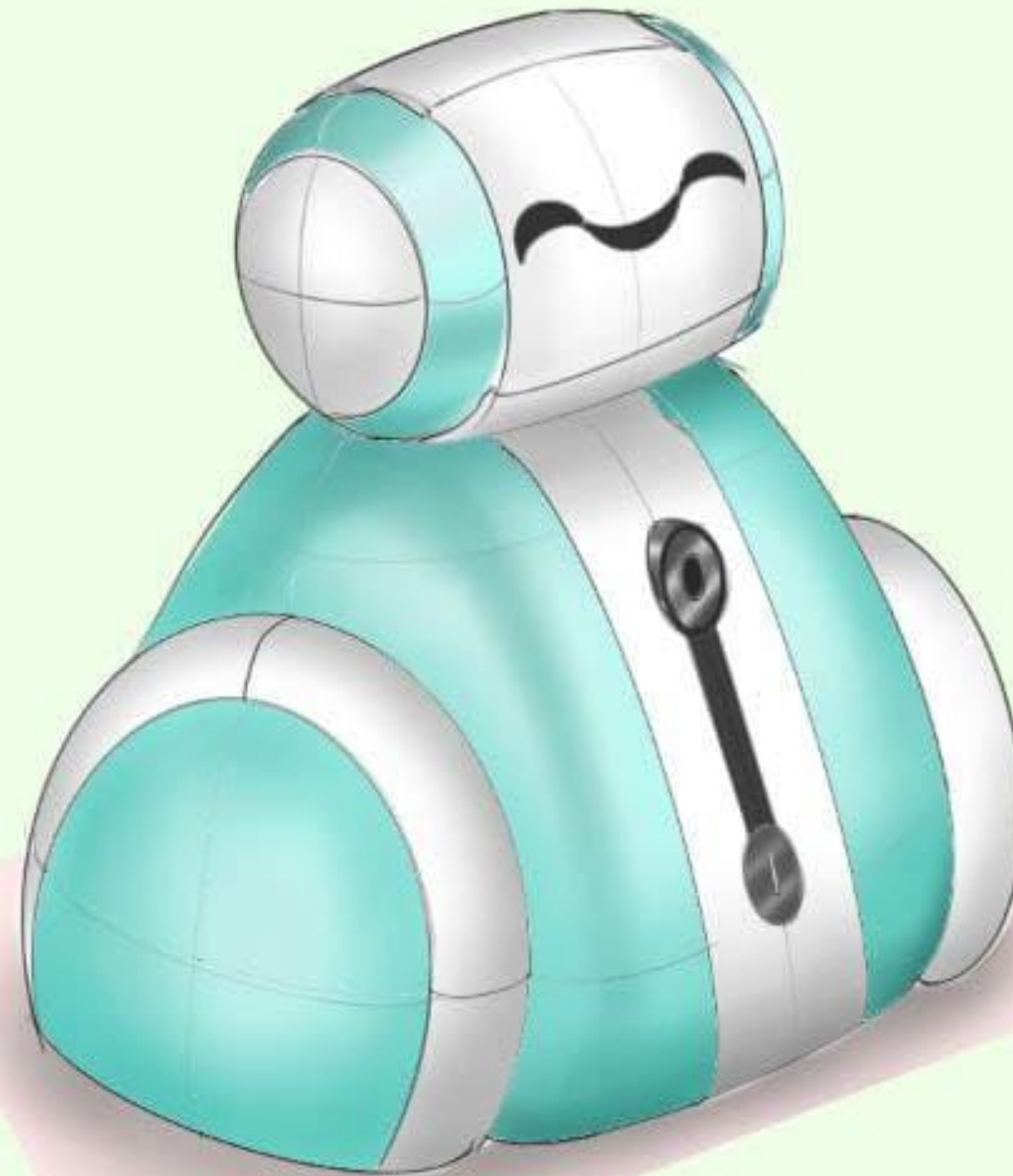
CURVED OLED DISPLAY
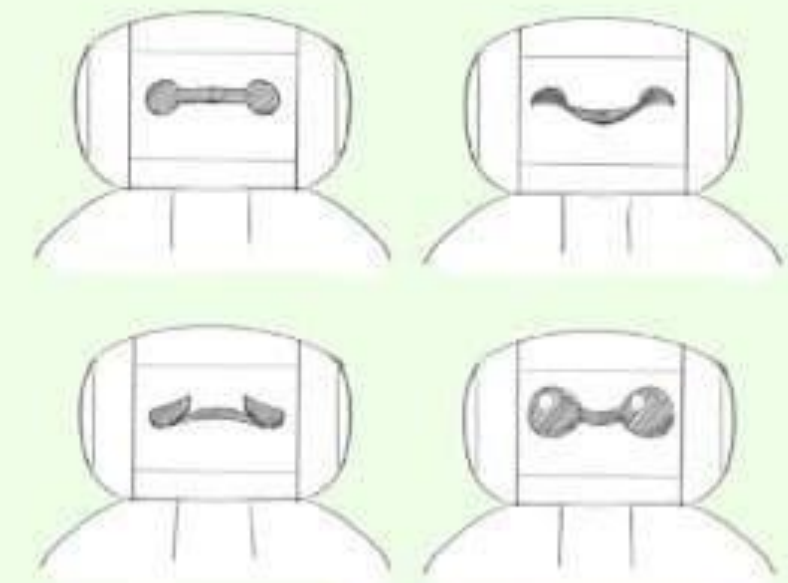**CAMERA**
POWER BUTTON
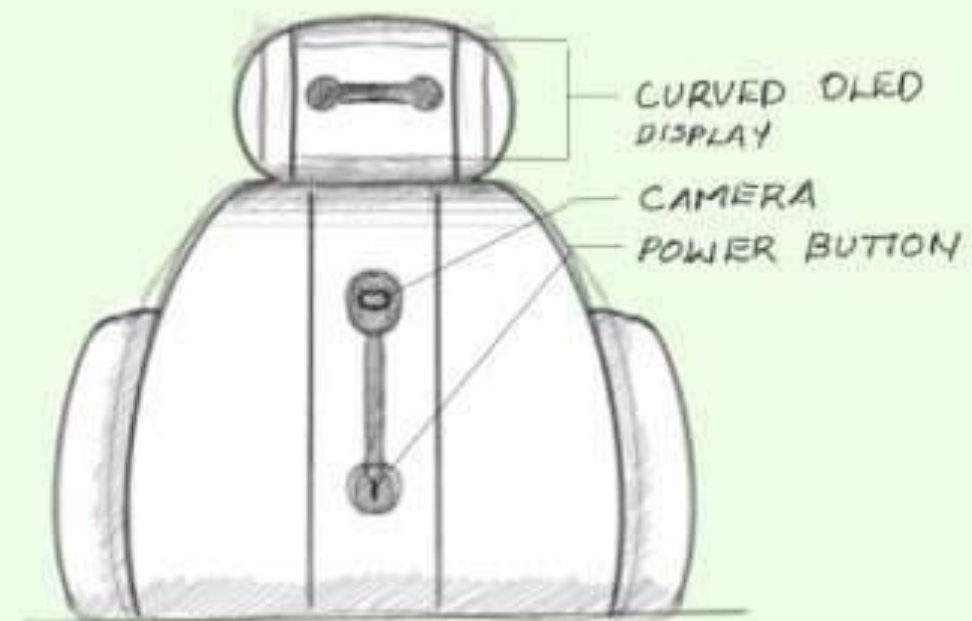
FRONT VIEW

SIDE VIEW

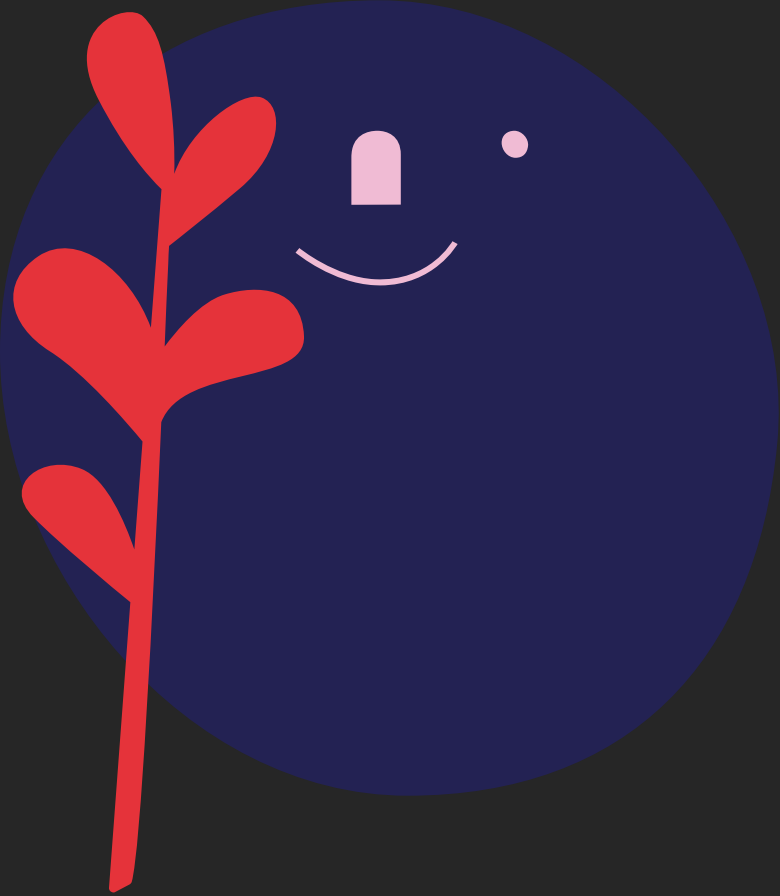PROJECTOR OPENING MECHANISM

DIFFERENT EMOTIONS

TECHVANTAGE

COMPETING PRODUCTS

COZMO

VECTOR

ALPHA MINI

WONDER DASH

WONDER CUE

MIKO 3

EILICH

MOXIE

Competitors	Prominent Features	USP	Revenue Model/Pricing
DDL Cozmo	• Multiple games with new content available per month. • Recognize faces and learn people's names.	• Kid-appropriate coding using graphical blocks of code that are dragged and dropped to create control chains.	• $299 with coding curriculum at $249
Anki Vector	• Can take pictures at your command. • Unique voice made of hundreds of synthesized sounds.	• Autonomous and self-charging. • Voice command control.	• $349 with yearly subscription at $47
UBTECH Alpha Mini	• Humanoid educational robot is fully programmable. • Human-like behavior and facial expression.	• Capable of natural and intuitive interaction. • Multiple degrees of freedom and movement	• $1300
Wonder Dash	• Supports kids self-guided exploration of programming languages, and personality development projects.	• Programmable to move, sing, dance, flash its lights, respond to voices, make sounds, and even tell a story.	• $180 with accessories at different prices 19-200 $
Miko 3	• Got dozens of emotions and is empathetic to the child. • Closed system featuring enhanced encryption.	• Global content companies have partnered and published their apps as new experiences and technologies	• $299 with Mikomax subscription for $99 annualy.
Eilik	• Through it's abundant facial expression it tells how it feels both physically and emotionally.	• Currently the most expressive toy bot available.	• It will retail for a $100 and delivery date is April 2022.
Moxie	• Encourage social interactions through missions and tasks. • Teaches emotion regulation techniques to help address anxiety in kids	• Can understand and express emotions with emotive speech, believable facial expressions and body language.	• $999 plus a subscription ($39/month) is required to operate.

TECHVANTAGE
ANALYTICS FOR AN INTELLIGENT WORLD

Cozmo is fun truck like robot whose main purpose is to introduce children to coding though a kid-appropriate fashion using graphical blocks of code that are dragged and dropped on top of each other to create chains that control Cozmo's actions. Each virtual block in the Code Lab represents a function that Cozmo can complete, from motion and manipulation to animations and facial and object recognition. .(ages 4 -12)

DDL Cozmo

- Priced at $299 Cozmo's advanced facial recognition software allows him to recognize faces and learn people's names.
- Cozmo lets you guide him through his environment using your smart device
- Control what Cozmo says and how he moves in the new feature, Cozmo Performs. Simply type a custom message, and tap tiles that correspond with Cozmo's animations to bring him to life.
- Performs actions like : Cozmo Sings, Fist Bump, or Pounce.
- Teaches kids about the basics of coding.

PERSONALITY

- Cozmo is a game playing machine that challenges kids to win with his favorite games of speed and skill, like Quick Tap, Keepaway, or Memory Match.
- After you've played the three intro games: Keep Away, Memory Match, and Quick Tap you'll unlock many more mini games. Plus new ones are being added each month.

PLATFORM

- CPU: ARM Cortex 4
- Voice Control: No
- Autonomous: No, requires smart device to control
- The Cozmo SDK is more mature, likely more stable and may be more suitable for anyone wanting to go deep on programming Anki robot toys.

PRIVACY

- Moxie and its full ecosystem is COPPA (Children's Online Privacy Protection Act) Safe Harbor certified.
- Personally identifiable data and sensitive information is encrypted with the highest level of security and can only be decrypted by a unique key that only the parent has access to

Vector is made to explore and react. His tech array allows him to intuitively interact with his surroundings through sight and sound. He Can recognize people and objects while detecting and avoiding obstacles.. .(ages 4 –12)

Anki Vector

- Vector uses an HD camera to see the world. Using computer vision, he can identify people, see and remember faces, and navigate his space without bumping into things.
- Vector has a powerful four-microphone array for directional hearing.
- Vector has touch sensors and an accelerometer so he knows when he's being touched and moved.
- Vector has a unique voice made of hundreds of synthesized sounds to create a language all his own. When you ask Vector a question, he utilizes a custom text-to-speech voice to speak directly to you.
- Vector combines a processor capable of running a smartphone with cloud connectivity to create one powerful brain.

PLATFORM

- With Vector, Anki massively upgraded the processor from an Arm Cortex 4 in Cozmo to a Qualcomm Snapdragon 200. The resulting speed increase from 100MHz to 1.2GHz means Vector supports onboard processing without the need for a companion device!

HARDWARE

- Qualcomm 200 Platform
- HD camera with 120 Ultra Wide FOV
- Beamforming Four-Microphone Array
- Infrared Laser Scanner
- 6-Axis IMU
- High-Res Color IPS Display
- WiFi connection.

PRIVACY

- Customer data is encrypted between the robot and the cloud, and payment transactions are encrypted in transit, but discussion of what happens in the event of a data breach is missing.
- There's a COPPA safe harbor certification for other products, but Vector is not listed.

TECHVANTAGE
ANALYTICS FOR AN INTELLIGENT WORLD

UBTECH Alpha Mini Robot - Alpha Mini is highly portable, bringing fun interactions and a wealth of expressions and functionality, including voice interaction, 4G LTE connectivity, face recognition, illustrated book recognition, and object recognition.AlphaMini serves as the perfect carrier for children to build an AI mindset by learning scratch programming, facial recognition, object recognition and motion control techniques.(ages 4 -12)

UBTECH Alpha Mini

- An educational robot capable of natural and intuitive interaction. It is retailed at $1,300.
- The Alpha Mini humanoid educational robot is fully programmable. This means you can customise his actions depending on the lessons and exercises.
- Equipped with ROSA, an open platform integrating the Android SDK. With ROSA, you can easily add the applications and documents of your choice.
- He is programmed using a Scratch-type block interface, can detect obstacles with his infrared sensor, and recognises 75 voice commands in English.

PLATFORM

- Designed to interact both naturally and intuitively.It has a facial recognition system that allows him to smoothly follow the person he's currently interacting with. Thanks to his human-like behaviour and facial expressions (he can even sneeze!), children will easily and quickly bond with him.

- Localized voice interaction: UBTECH has worked with Naver's advanced Clover AI voice platform.
- Rich emotional expressions: With its two high-resolution LED eyes, it shows more than 100 expressions.
- Equipped with 14 flexible servos as body joints, it has multiple degrees of freedom and movement - dance, play Kungfu, Taiji and do push-ups.

PLATFORM

PRIVACY

- Personal information such as user's name, telephone number, email, face data, voice data will be collected.
- GDPR compliant with related laws and regulations, such as the legality of data collection and processing, purpose restrictions, storage restrictions.

TECHVANTAGE
ANALYTICS FOR AN INTELLIGENT WORLD

Winner of the Creative Child 2017 Kid's Product of the Year & 2017 Toy of the Year Awards, Dash is beloved by kids and teachers across North America and around the world. Using one of Wonder Workshop's 5 free apps, like Blockly or Wonder, kids ages 6-11 can program Dash to move, sing, dance, flash its lights, respond to voices, make sounds, and even tell a story.

Wonder Dash

- With a growing library of in-app demos, tutorial, and challenges, Dash supports kids self-guided exploration of programming languages, robotic capabilities, and personally meaningful projects.
- Dash's motors and sensors work together seamlessly to provide accurate and versatile behavior while reacting in real time to its surroundings, inspiring kids to build problem-solving skills through coding, engineering, and design.
- Built on Microsoft's MakeCode platform, the app gives kids the autonomy to choose from one of four personalities, plus explore multiple programming languages.
- Dash retails for $180 & it's upgraded model Cue retails for $200.

PLATFORM

- The Dash robot is designed for students who have never tried robotics or coding before. It allows them to see how the blocks they connect can bring the robot's actions to life in a tangible way. Dash is a powerful and user-friendly option for elementary school students. Furthermore, it's easy to update, install, and integrate with classroom devices in various types of learning environments.

HARDWARE

- Bluetooth-enabled
- Voice detection
- Sound recording
- Object detection
- Precision motors
- Accelerometer
- Gyroscope
- Programmable LEDs

PRIVACY

- Wonder Workshop's robots and mobile apps are COPPA certified by the kidSAFE Seal Program and are fully compliant with the Children's Online Privacy Protection Act.
- Parents and teachers have control over how we use kids' data and the right to request that they delete some or all of their kids' data.

MIKO 3

Miko 3 is the latest innovation from Miko, the global technology company eponymous with the playful little robot that's been capturing kids' hearts since 2017. (ages 4-12)

- Equipped with a wide-angle HD camera and time of flight range sensor, odometric sensors to map distance and edges.
- Miko 3's expansive touchscreen provides a healthy alternative to playtime on smartphones and tablets.
- Through a user-friendly mobile app, parents can receive real-time insights about the engagement Miko has with their child
- Miko 3 retails at $299, with a special introductory price of $199.
- Mikomax ($49 USD per quarter/ $99 USD per year,) brings unlimited access to premium paid apps - 50,000 hours of audio video libraries,1000+ games, videos, stories, puzzles, songs, coding experiences, yoga and more.
- Available in eight languages and includes a one-year extended warranty.

PERSONALITY

- Understands and responds to kid's instilling feelings of companionship to help build confidence and encouraging creative interactions that are individual to every kid.
- Miko's got dozens of emotions; It's curious, expressive, and empathetic to the child.

PLATFORM

- Hosts child-focused free and paid apps with new content, capabilities and experiences added every month.
- Global content companies have partnered and published their apps as new experiences and technologies -Da Vinci Kids, KidloLand, Cosmic Kids, Out Of This Word, Tiny Tusks, Dreamykid etc.

PRIVACY

- With robust privacy policies and a closed system featuring enhanced encryption, Miko ensures that every byte of user data is protected.

TECHVANTAGE
ANALYTICS FOR AN INTELLIGENT WORLD

Eilik is a iittle companion bot with that fits in your palm, is touch-sensitive, and is one of the most expressive little robot - has multiple "faces" based on four basic emotional states: normal, happy, angry, and sad. Each of them comes with a wide range of expressions and reactions, all of them displayed on the bot's OLED screen.

Eilik

- Through it's abundant facial expression it tells how it feels both physically and emotionally.
- Eilik doesn't like "heights", so you have to be careful when you take it from the desk. If you hit it in the head, it gets dizzy. If you hit the table, the vibrations make it scared.
- Its body and arms can move thanks to a specially-designed, patented EM3 servo motor.
- Eilik loves to play with his own kind. They recognize each other in this wild world, play and build friendships(or fight) with each other.
- It will retail for a $100 and delivery date is April 2022.

PERSONALITY

- Currently the most expressive toy bot available.
- It can talk, imitate in funny voices, dance, laugh, cry, yell etc All human emotions are stored and can bring them all to the surface by gently touching it, hitting it in the head, picking it up from the desk etc.

HARDWARE

- Equipped with touch sensors on its head, back, and belly, a microphone, and a 3W speaker.
- Eilik is powered by a 450 mAh battery that offers 1.5 hourr playtime.
- The bot is made of High-strength Polycarbonate

PRIVACY

- No Information available on data privacy

Moxie is a next-generation AI robot that complements traditional therapy and supports social-emotional development in kids through play.(ages 4 -10).

Moxie

- Encourage social interactions through missions and tasks
- Learn emotion regulation techniques to help address anxiety in kids
- Improve critical thinking and reading comprehension skills
- Enhance creativity and imaginative play
- Has a companion portal for kids with additional games and activities.
- Through the parent app you can track achievements earned for a child.
- Moxie retails for $999 plus a subscription ($39/month) is required to operate.

PERSONALITY

- Moxie can understand and express emotions with emotive speech, believable facial expressions and body language, tapping into human psychology and neurology to create deeper bonds.

PLATFORM

- Embodied developed a machine-learning platform, called SocialX, that allows the robot to process and respond to natural interactions.
- A camera embedded in the robot's forehead allows it to see child, while a speaker integrated in its lower body enables it to speak. A coloured bar on its chest also shows its battery life.

PRIVACY

- Moxie and its full ecosystem is COPPA (Children's Online Privacy Protection Act) Safe Harbor certified.
- Personally identifiable data and sensitive information is encrypted with the highest level of security and can only be decrypted by a unique key that only the parent has access to