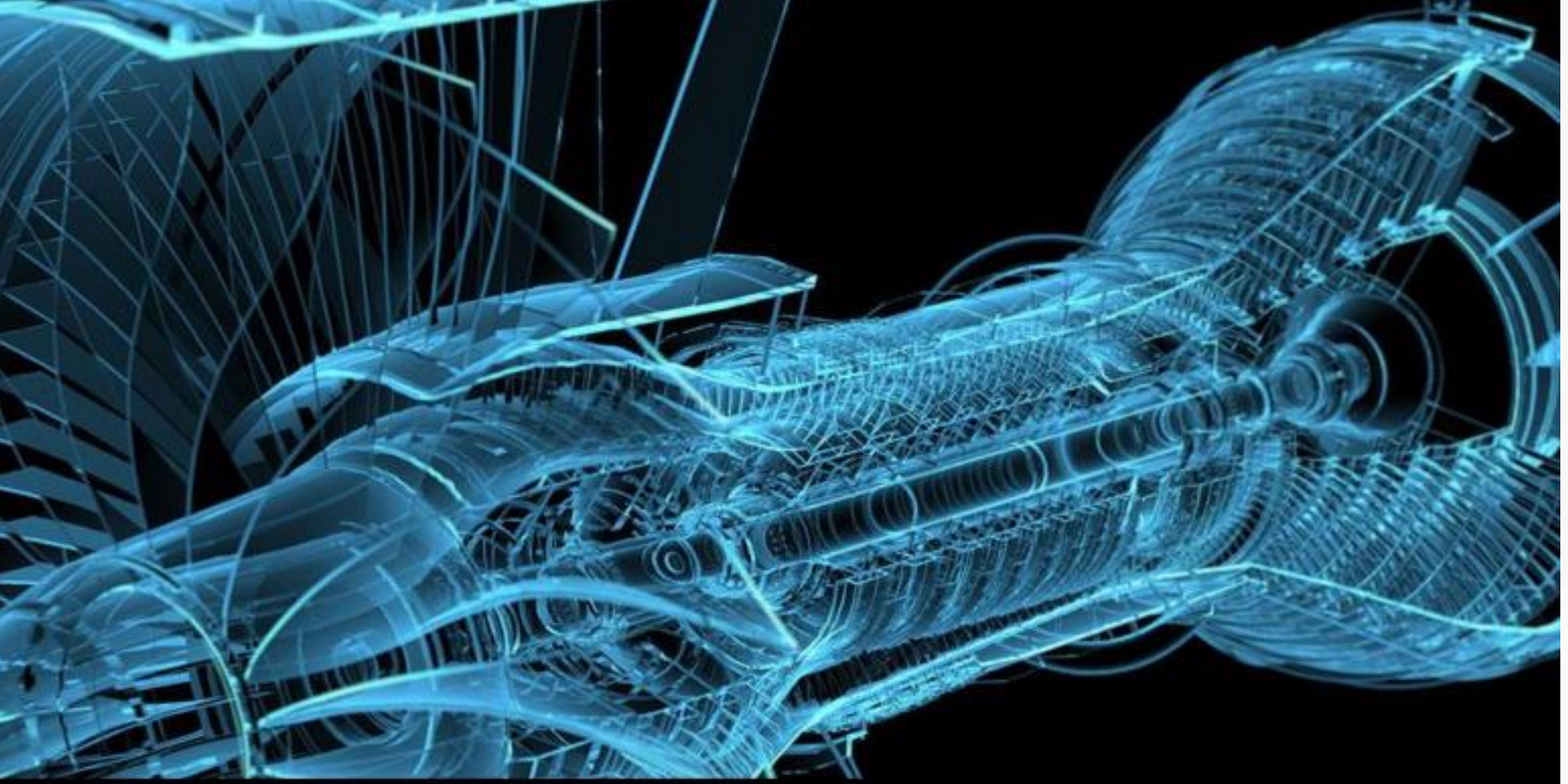

Keeves: Innovating Behind the Scenes

OUR BIG IDEA

Adding **AR / VR / AI** to Digital Twin is like giving wings to a Tiger for it to **FLY**.

Immersively working on your **Digital Twin** on a **connected operations platform** can provide solutions that are otherwise not possible in certain working conditions.

KEEVES
KEEVES TECHNOLOGIES PVT. LTD

Credentials- Short Profile

- **10 years** of **Deep Tech** expertise delivering digital solutions.
- Innovating our **Computer Vision enabled AI engine (FRISK)** comprising of **100+ use cases.**
- Engineering **Virtual** and **Extended Reality** enabled **immersive & Interactive Simulations (Industry Verse)** for **heavy industries ,** in-sync with **command centers** to operate on **connected operations platform aided with Computer Vision enabled Digital Applications, AI and iOT** in synergy with legacy systems.
- **Geeks at work are** committed towards delivering intelligent digital applications for your **complex technological & business** challenges.

- Engineered w**orld's first Corporate MMO Virtual Walkthrough (Industry verse)** for UMW- Toyota Malaysia in the year 2012.
- We built India's first 3D First person Shooter game - Moonstruck in 2005.
- Expertise in designing non-conventional Virtual & Augmented Reality approach for simulation, training ,demonstration & experience.
- We have built Immersive and Mixed reality solutions for heavy engineering companies across verticals viz. Iron & Steel , Manufacturing, Oil & Gas, Natural Resources etc.

Collaborations & Associations

intel Software Partner

nasscom deeptech club

Gioco Studio

BEYOND US
The living Industry Verse

CERTIFIED ISO 9001 CERTIFIED

KEEVES TECHNOLOGIES PVT. LTD

Trusted by Industry Leaders

TATA STEEL

TOYOTA Let's Go Places

HITACHI Inspire the Next

TATA METALIKS

everis an NTT DATA Company

HASKELL

CENTURYPLY

Greenply Industries Limited

inspectAR

Webel opportunities infinITe

Kingston TECHNOLOGY

VSK ENERGY

Service Offerings

1. Concept Prototyping
2. Digital Twins
3. VR / AR/ MR/ XR Solutions
4. Simulated Safety Training
5. AI enabled Computer Vision
6. Gaming Solution
7. General, Predictive & Generative AI solutions.
8. Advisory Services

KEEVES TECHNOLOGIES PVT. LTD

Case Studies

Virtual Reality Industry Verse for Industrial Safety

- ✓ Training Simulator for Continuous Casting Machine
- ✓ Life Like training on Fire Safety in Virtual Reality
- ✓ Positive Isolation VR Training
- ✓ Working at Height, Confined Space entry and Exit.

COVID-19 LOCKDOWN BUYING SOLUTION

- ✓ Implemented an computer vision enabled solution for dealers and architects for remote buying facilitating COVID
- ✓ Provided 5X increase in Sales
- ✓ 360° simulation of Veneers
- ✓ Improved productivity and TAT

Remote Construction Site Supervision

- ✓ Remote Construction Site supervision using VR.
- ✓ 3D Photogrammetric
- ✓ Real-time rendering.
- ✓ 100% Reduction in casualties caused by SOP violation

Immersive Dome Solutions

- ✓ VR Solutions
- ✓ Immersive 360 degree dome solutions
- ✓ Projection Mapping

PCB Assembling for OEM

- ✓ Solution being used at NASA.
- ✓ Only circuit simulator on Augmented Reality
- ✓ Supports all IEEE certified ICs.

VR Simulator for Hot Metal Transportation

- ✓ Locomotive and Torpedo Planning and scheduling.
- ✓ Immersive Loco Operation and movement module.
- ✓ Molten Hot Metal Transportation the most intricate use case.

Corporate MMO VR

- ✓ World's first MMO Corporate VR
- ✓ Toyota UMW recognition.
- ✓ Integrated VoIP.

Gamification of Medical Director tasks.

- ✓ Unified and harmonized task scheduler gamified.
- ✓ 60% reduction in errors.

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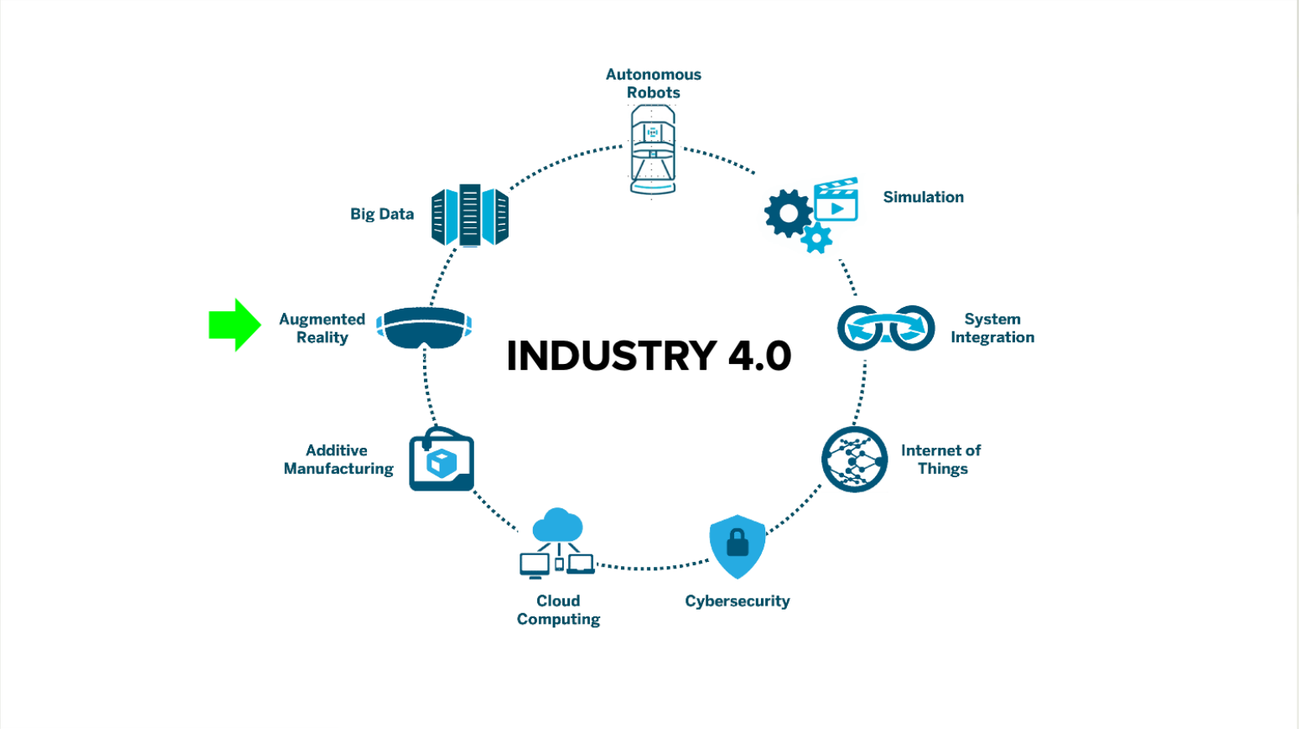
Innovation Spectrum



Immersive Tech

Industry-leading expertise in virtual experiences like our flagship Industry-Verse for Toyota in 2011.

AI Solutions

Unlocking value from data using generative and predictive AI models.

Computer Vision

Creating lifelike digital environments through computer vision and game engines.

Block Chain

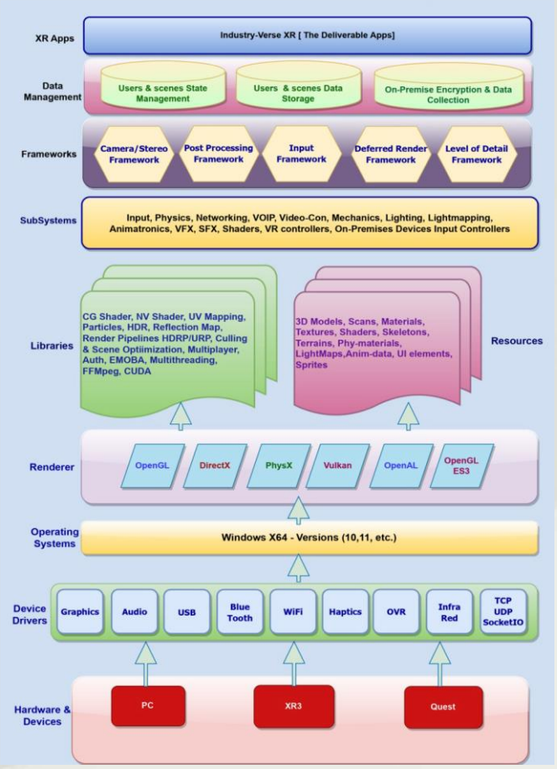
Transformative Blockchain solutions for traditional industry problems.

Product Suite

The living Industry Verse

Immersive Technologies

Beyond us revolutionizes industries with a scalable, **interconnected future,** merging **VR, AR, MR, XR, and AI** into a **decentralized, 3D universe** tailored for industry needs**.** It enables global collaboration in real-time**,** fosters a user-led economy, and drives the shift to a **Web 3.0 world.**

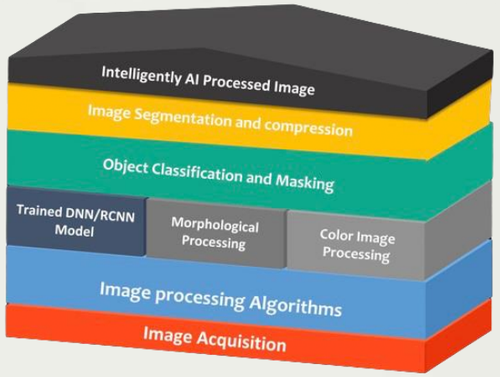


1. **Break Geographical Barriers:** Foster real-time, global collaboration and networking.
2. **Elevate Training & Operations:** Utilize immersive simulations for superior training outcomes and operational efficiency.
3. **AI-Driven Efficiency:** Streamline operations with intelligent insights and **XR** technologies.
4. **Industry-Specific Solutions:** Access bespoke solutions that address unique industry challenges.
5. **Haptic, Platform Independent**: Being interoperable, interconnected and deep haptics completely engages users.

FRISK
DETECT, PROTECT, PERFECT

Computer Vision

FRISK is an **Artificial Intelligence** enabled **Computer Vision** based **Machine Learning** trained intelligent image and Video processing engine.



1. **Recognition** - Image, Code, Object ,Pattern , OCR
2. **Processing** - Photogrammetry, AR, VR, Digital
3. **Facial Recognition** - Security & Surveillance , Search
4. **Segmentation & Compression =** Complexity solutions involving Keras, YOLO, PyTorch, OpenCV and combinations
5. **Fourier Transformation -** Forward and inverse **DFT** using distributed pixel cache.

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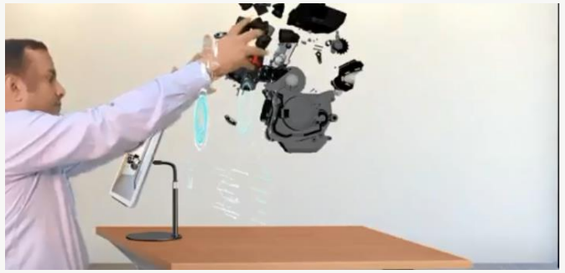
The living Industry Verse

Remote Collaboration – Extended Reality & Digital Twins

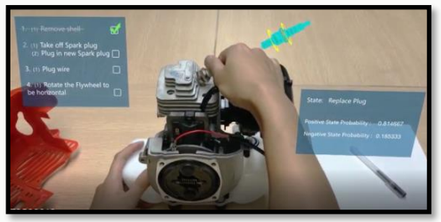


Augmented Reality

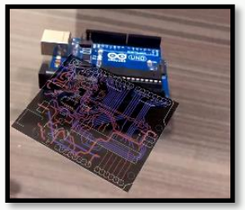
Metaverse

Virtual Trials

AI+XR+iOT



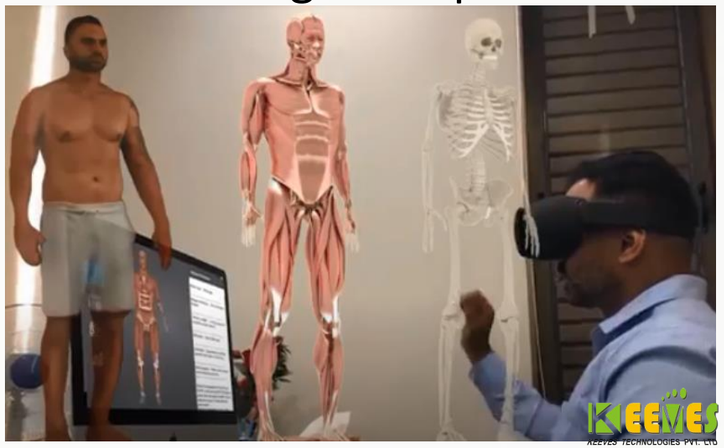
AI+AR+iOT



Holoportation

Virtual Trials

Learning – Deep Tech



Custom Deep Tech Solutions - Service Offerings

VR Training

Transform workforce skill development through immersive simulations.

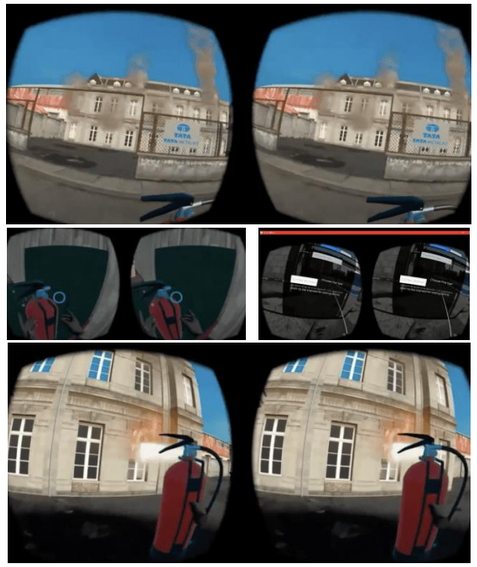
AR Manufacturing

Streamline production with augmented operations and digital twins.

Autonomous Mobility

Enable autonomous navigation through advanced perception AI.

Customer Success Story – VR Safety at work Tata Metaliks



VR - Fire Safety

Our Industrial Fire Safety module uses virtual reality to simulate real fire scenarios, equipping participants with crucial emergency response skills and knowledge, significantly enhancing preparedness and safety in potential fire incidents.

Key Benefits

1. **Enhanced Emergency Preparedness:** Trainees experience realistic fire scenarios, helping them to develop quick and effective response strategies.
2. **Risk-Free Environment:** Provides a safe space for users to learn and practice fire safety procedures without the actual dangers of fire.
3. **Interactive Learning:** Engages participants with interactive elements, improving retention and understanding of complex safety protocols.
4. **Performance Tracking:** Integrated tracking tools assess user performance and identify areas needing improvement, ensuring all trainees reach required competency levels.

1

2

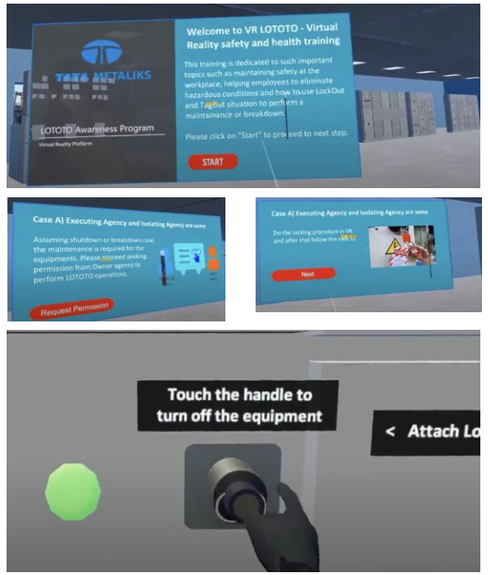
VR - Work at Height

The Work At Height module delivers vital VR-based training on safe practices and equipment use for working at heights, reducing fall risks and ensuring compliance with safety standards.

Key Benefits

1. **Reduction in Fall Incidents:** Educates workers on the correct use of safety equipment and procedures to significantly reduce fall-related accidents.
2. **Scenario-Based Training:** Offers varied, real-life scenarios that workers might encounter, enhancing their problem-solving skills in safe conditions.
3. **Compliance with Regulations:** Ensures training is compliant with global safety standards, helping organizations meet legal requirements.
4. **Customizable Modules:** Tailored to specific job roles and environments, making the training more relevant and directly applicable to daily operations.

3



VR - LOTOTO

This module provides immersive training on Lockout Tag-out/Tryout procedures, teaching effective energy isolation to prevent hazardous accidental machine start-ups, fostering a robust safety culture.

Key Benefits

1. **Prevention of Accidental Start-ups:** Teaches the critical importance and methods of energy control to prevent unexpected machine start-ups during maintenance.
2. **Hands-On Practice:** Allows workers to practice complex LOTOTO procedures in a controlled virtual setting, reducing learning curves in real-world applications.
3. **Enhances Safety Culture:** Reinforces a safety-first mindset among employees, which is crucial in environments dealing with high-energy equipment.
4. **Multi-User Training:** Enables multiple employees to train simultaneously, ensuring team-wide compliance and understanding.

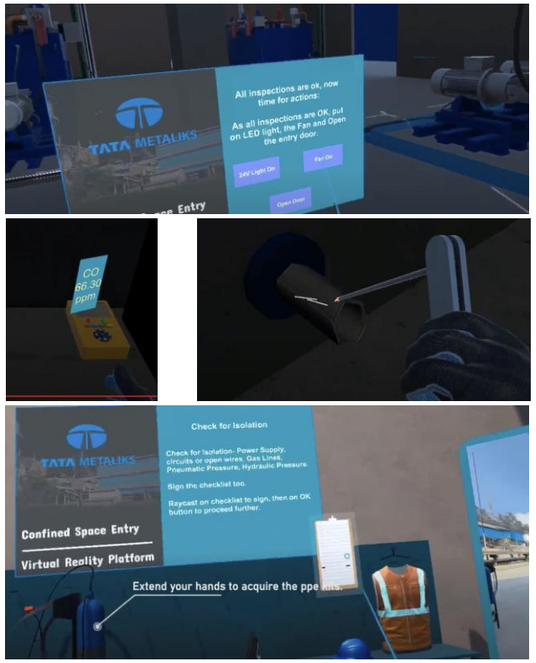
4

VR - Confined Space

The Confined Space Entry & Exit module offers realistic VR training on navigating and managing emergencies in confined spaces, focusing on safety and hazard recognition to save lives and improve response strategies.

Key Benefits

1. Lifesaving Skills Development: Trains employees on the critical skills needed for safe entry and exit from confined spaces, potentially reducing fatalities.
2. Recognition of Hazards: Helps employees identify and react to hazards in confined spaces, such as toxic gases or oxygen-deficient atmospheres.
3. Emergency Response Training: Prepares workers for emergency situations in confined spaces, improving overall response times and coordination.
4. Documented Competency: Provides records of training and competency levels for auditing and compliance purposes.



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Customer Success Story – HERO HASKELL

dysrUPtek

VR Based Remote Safety Audit

For HASKELL (A ThyssenKrupp company) USA, Florida we designed a Mixed Reality based Hazard Elimination and Risk Oversight application connected with different Mixed Reality Gears, LIDAR Cams and CAD files. Conducting remote safety audit by connecting to the site virtually.

Key Benefits:

Enhanced Safety
Remote Safety Audit
Increment in Efficiency
Productivity Increase
Time bound project Management

"Hazard Elimination and Risk Oversight" (HERO): Virtual Job-site Training & Safety Audit

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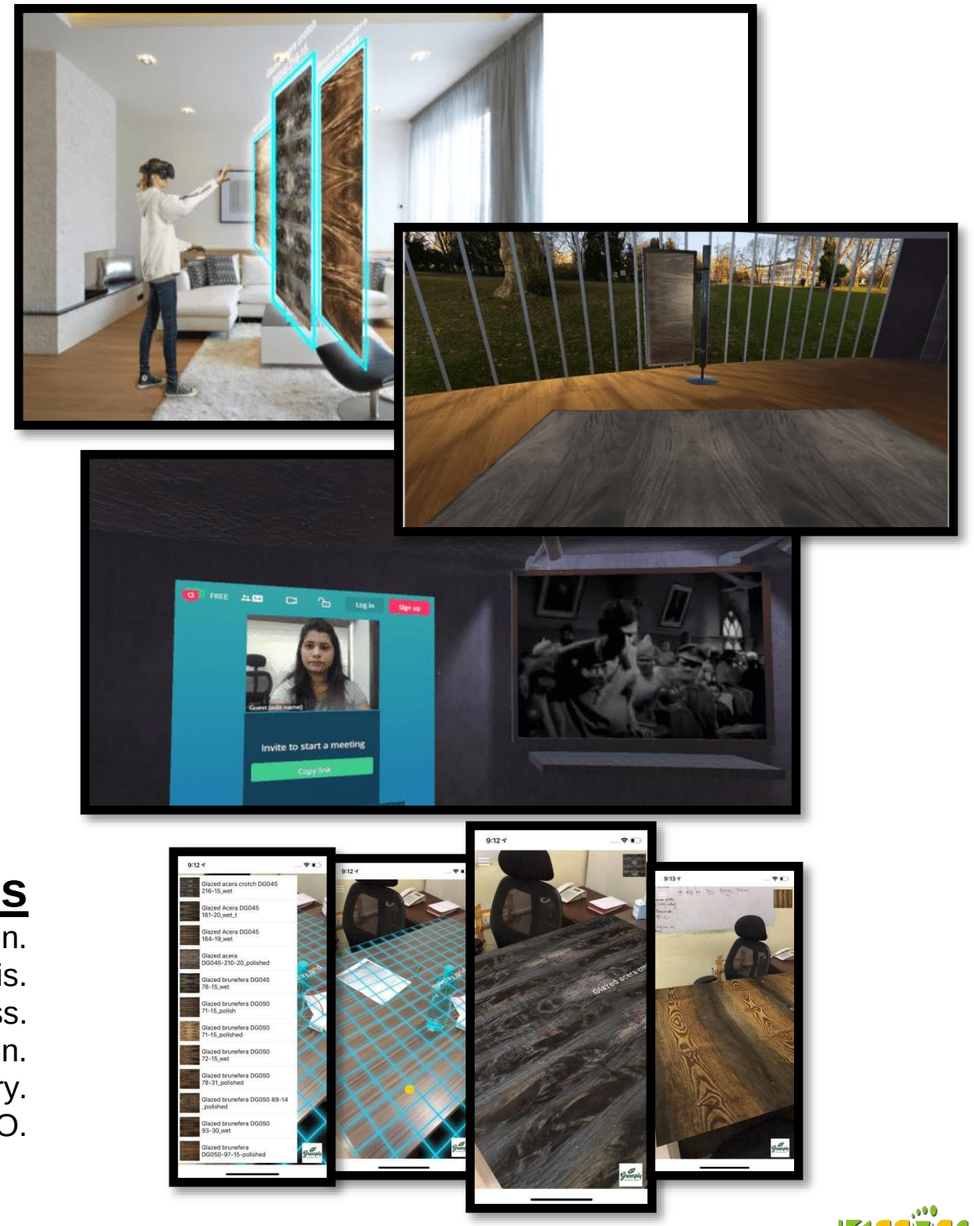
Customer Success Story – VIRTUAL BUYING

Virtual Meet, Collaborate, Select & Order

Veneers being naturally occurring , the selection process is very much affected by the factors viz. Light conditions (preferred natural) , superior in person viewing as color gradient plays a dominating role.

We developed an entire suite of solution comprising

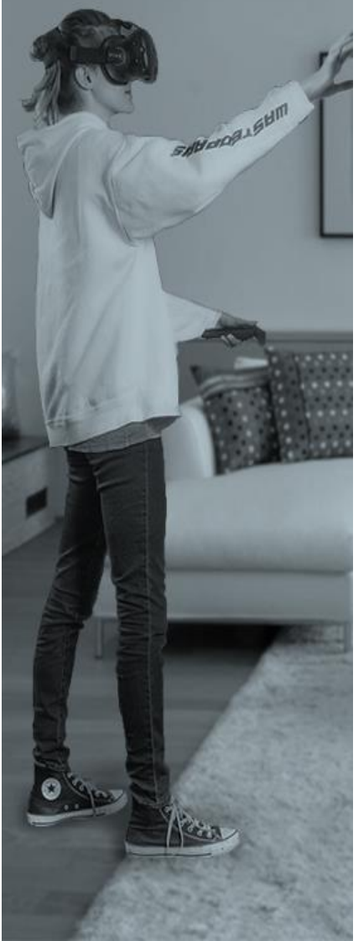
1. Photogrammetry Setup - This setup at factory premises helps resurrect the Veneer with its true colors and properties and also in 3D for AR/VR enabled interactive simulation.
2. FRISK - Computer vision enabled AI engine at play to ensure the image captured using photogrammetry is an absolute close match with Veneer properties being viewed from naked eye.
3. Remote Collaboration tool for enabling Architects and Dealers select and buy Veneers with the help of Virtual/ Extended Reality from the comfort of their place.
4. Augmented reality enabled viewing and selection application for preferred viewing.
5. Video Conferencing with Avatars and individuals within the metaverse.



Key Benefits

Cost saving on customer travel, hosting and delegation.
No calendar or travel schedule availability crisis.
Comfortable and easy selection process.
Feasibility to apply varnish or polish effect in Virtual Reality, though not applicable with real selection.
Digital repository.
Remote VC, Avatar based , MMO.

Customer Success Story – CCM Tata Metaliks



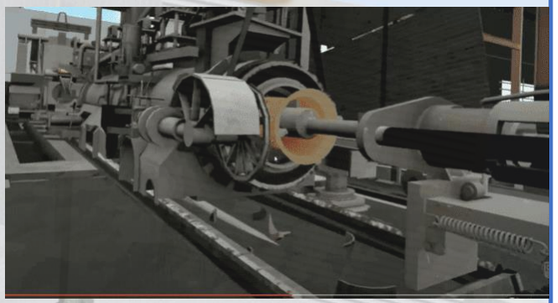
Leverage the power of **VR** technology to train existing/new workforce.

CCM VR solution covers detailed design and working operation of the **Centrifugal Casting Machine (CCM)** covering end-to-end CCM operation, producing casting DI (ductile iron) pipes.

VR app to train new and existing workforce on how to operate CCM machine, its mechanism, maintenance and output factors based on multiple pre-condition modules.

CCM Simulator:

The simulator lets you view, customize, and experience the **Continuous Casting machine** in virtual reality mode.

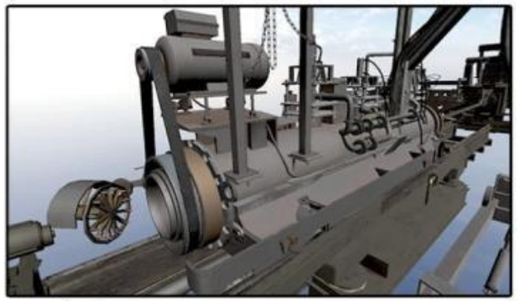


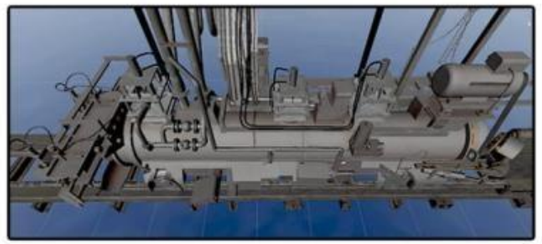
It allows

1. To study **CCM** functioning
2. Components
3. Process.
4. Virtual debugging

Top Benefits to the Organizations

1. Reduced time to train
2. Virtual debugging
3. Bridging Gap between worker and machine





Customer Success Story – Metaverse Toyota

MMO Corporate Virtual Walkthrough collaboration Program

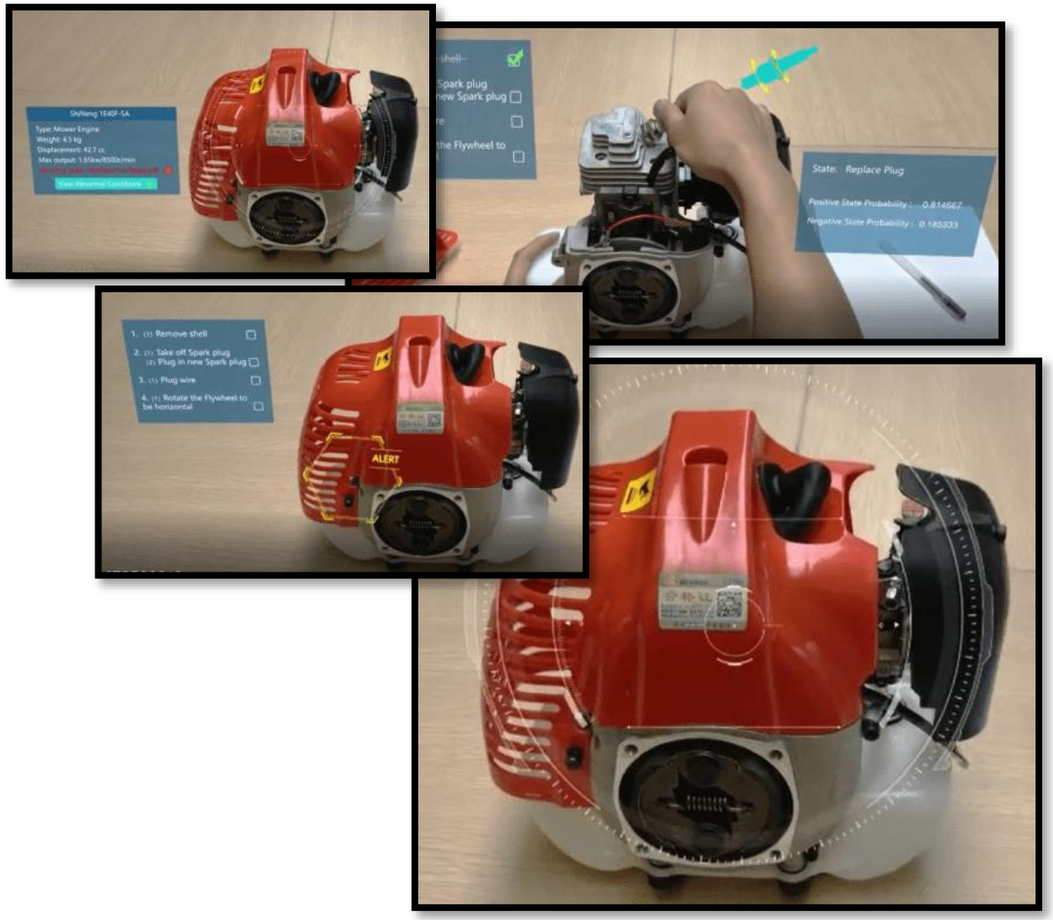
World's first MMO Corporate program built in 2011.
People can collaborate with each other across vast geographic distances to virtually tour a new product with the engineering team.
This avoids incurring travel costs and the ability to stay in touch and keep collaborating on the product which is crucial to their success.

Top Benefits to the Organizations

Remote Collaboration
Custom VoIP
No geographic Boundaries
Holoportation
Massive Multiple users.

Remote Collaboration Across Locations To View Same Project Design And Resolve Conflict

Repair Training Using Augmented Reality and IoT



Motor Repairing Using Hololens:

- Staff are trained to perform procedures and operations to properly service, repair, and maintain equipment, improving efficiency and increasing the safety by connecting to AR/VR applications. This assures a higher productivity and fewer risks for errors.
- A completely intuitive Augmented reality enabled Computer vision based solution integrated with iOT to help conduct repair of a damaged spark plug of a motor.
- Allows the technician to go hands-free and follow the instructions on his visor.
- Image recognition and processing though Machine Learning based algorithms.
- Get Alert messages for the faulty areas.
- Check the spark plug and replace it correctly.
- Resulting in reducing error rates to zero.

Key Benefits

Completely remote non human guided
Absolutely machine guided and intuitive
No calendar or travel schedule availability crisis.
Enhanced Safety
Enhanced Productivity
Reduced error rates.

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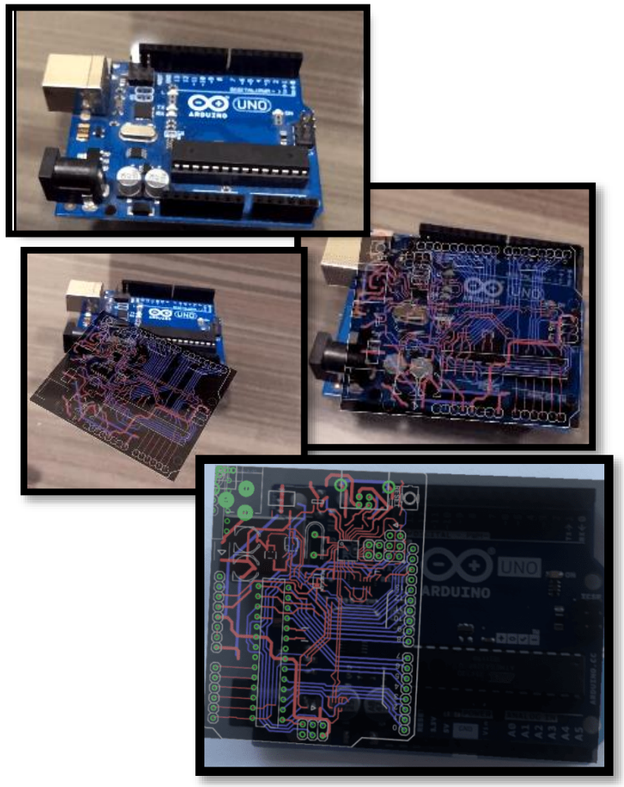
Customer Success Story Inspect AR - PCB Debugging

PCB Debugging Using Augmented Reality on Smartphones iOS / Android:

- Whether for tele-engineering, remote design collaboration, co-debugging, inner layer visualization, instant component lookup and net searching while in the lab, or easier-than-ever work instruction diagrams. The inspectAR tool helps the modern, cross-functional hardware teams of today turn their PCB into a live and interactive, model-based piece of documentation once it comes back from the factory.
- As continued semiconductor scaling drives increased reliance on small form-factor and fine pitch components, with a rising number of passives and a broad range of advanced-process technology required to implement designs. In addition, compact and cost-effective sensors, microcontrollers, and memory have turned the appliances, infrastructure, and devices of today's world into networks of PCBs working together simultaneously. Electronic design automation (EDA) design software has significantly scaled and innovated to meet these demands. This industry trend has caused a reactionary bottleneck in testing, debugging, and reworking when hardware products are manufactured; both in prototype and mass-manufacturing scenarios. The PCB design software industry has thus far been unable to pivot towards this trend due to the technological inability to interpret a physical object like a PCB with the same accuracy that a human would. Countless errors and inefficiencies occur among both trained R&D engineers as well as factory floor technicians when they need to access documentation to do any kind of work on a manufactured PCB.
- The inspectAR tool overcomes the technological barrier of using software to interpret a design in the real-world by using nothing more than a camera and some EDA manufacturing outputs (AR glasses neither required nor supported). It is not much harder than depositing a check to your bank account using a smartphone app was five or ten years ago. Now, just by clicking on a component, you are brought to its data sheet, supplier information, and a design-specific pinout. A complex net, such as "GND" on a 12-layer board can be reduced to a set of probe-able points, even if a test point was not configured in the design.



Key Benefits

Easy-to-use AR technology requires only basic experience with smartphones and cameras

Any PCB shape will work, size depends on your camera
Simple calibration process can account for changes of assembly completion and lighting

Easy color selection for overlays, nets can also be colored individually and not by layer
Desktop camera control has video microscope-inspired control
Built-in component search automates finding data-sheets and parametric part information

AR probing by clicking on components to view attached nets and other components

Explore a board intuitively based solely on the topology between nets and components

Built-in work instruction and documentation tool

Augmented Reality based Product Configurator

Example: AR Car Configurator:

The Augmented Car configurator lets you view, customize, and drive a beautifully detailed car in augmented reality on your smartphone.

AR car configurator app has awesome features:

1. It offers interactivity with your smartphone as well as the paper - marker.
2. Customize the car as you desire with different wheels types.
3. Drive the car and view the interiors of the car in detailed 3 Dimensional aspect.

Key Benefits

- Assemble and configure products on your smartphone
- Customized Catalog
- Bridging Gap between customer and dealer

Unique Value Proposition

1

Creativity

Blending imagination with technological possibilities.

2

Engineering Excellence

Rigorous design and development processes.

3

Technological Leadership

Pioneers in deep tech like AR/VR, AI, computer vision.

Transformative Solutions

1

Assess Needs

In-depth evaluation of current challenges and future goals.

2

Architect Solution

Leverage our multi-disciplinary expertise to design a tailored solution.

3

Deliver Transformation

Implement solution and provide ongoing support for sustained impact.

Why Partner with Us?

Cutting-Edge Innovation

Stay ahead of the curve with our future-forward technological capabilities.

Proven Track Record

Decades of successful deployments for industry titans.

End-to-End Solutions

From strategic consulting to implementation and support.

Growth Catalyst

Drive transformation and gain sustainable competitive advantages.

Our Strategic Approach

1

Deep Discovery

Immersive understanding of your unique situation through thorough assessments.

2

Rapid Prototyping

Collaborative iteration and refinement of solution concepts.

3

Agile Implementation

Flexible deployment for seamless integration with existing systems.

4

Continuous Optimization

Perpetual monitoring and enhancements for lasting impact.

World-Class Engineering

Design Expertise	Software Engineering	Hardware Proficiency
User Experience	Cloud & DevOps	Electrical Engineering
Data Science & AI	Computer Vision	Robotics

Global Thought Leadership

Leading Conferences

Our experts regularly speak at marquee technology conferences worldwide.

Research Publications

We author cutting-edge research papers published in top scientific journals.

Industry Consortiums

We actively contribute to defining standards for emerging technologies.

Empowering Start-ups

1

Ideation Support

We guide start-ups from concept to minimum viable product definition.

2

Deep Tech Solutions

Leverage our full-stack capabilities to build truly innovative offerings.

3

Commercial Scaling

Drive rapid growth through our market expertise and ecosystem connections.