

Case Study

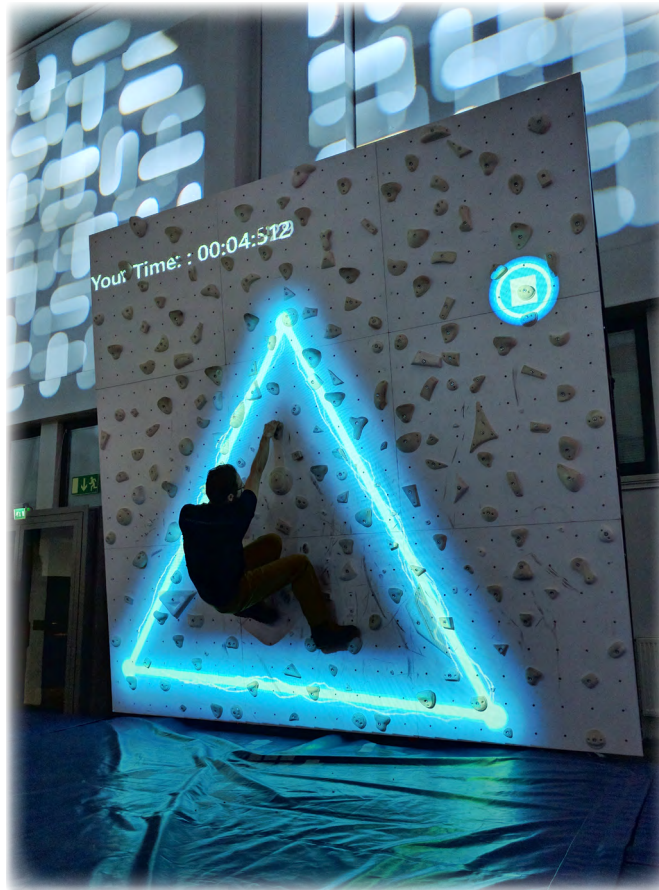
Augmented Climbing Wall takes climbing to a whole new level



Industry: Sport

Region: Worldwide

Type of solution: X605, Xbox Kinect, Intel PC, loudspeakers, touch-screen, protective housing, bespoke software



Challenge: Augmented Climbing Wall is the world's first global gaming platform for climbing and bouldering walls. It combines projected graphics and body tracking to create interactive games and training applications.

Solution: Augmented Climbing Walls interactive games are projected onto a white wall with white climbing holds. The sophisticated system is programmed to recognise individual human body parts, making the games responsive to climbers' movements. At its heart is a bright 6,000-lumen X605 Optoma projector, an Xbox Kinect – a motion tracking camera using Valo Motion's own computer vision algorithms and a powerful customised Intel PC running software developed by the team.

Results: Augmented Climbing Walls have now been installed across Norway, Sweden, Finland, Russia, UK, France, Germany in Europe, as well as Canada, USA, South Korea, Singapore and Australia.

The founder of Augmented Climbing Walls, Dr Raine Kajastila, said: "We have had an absolutely brilliant, overwhelming response from both climbers and operators."

Jump Ninja in Manchester is one of two centres in the UK with an Augmented Climbing Wall. Hailey Edwards is the General Manager at the centre. She said: "Our customers' response to the wall has been incredibly positive. I hadn't expected it to be as popular as it is. The children love it but it is also attracting serious climbers to our centre."

Installation:

Augmented Climbing Wall is the world's first global gaming platform for climbing and bouldering walls intended to be used in climbing walls, activity parks, entertainment centres and fitness gyms. It combines projected graphics and body tracking to create interactive games and training applications.

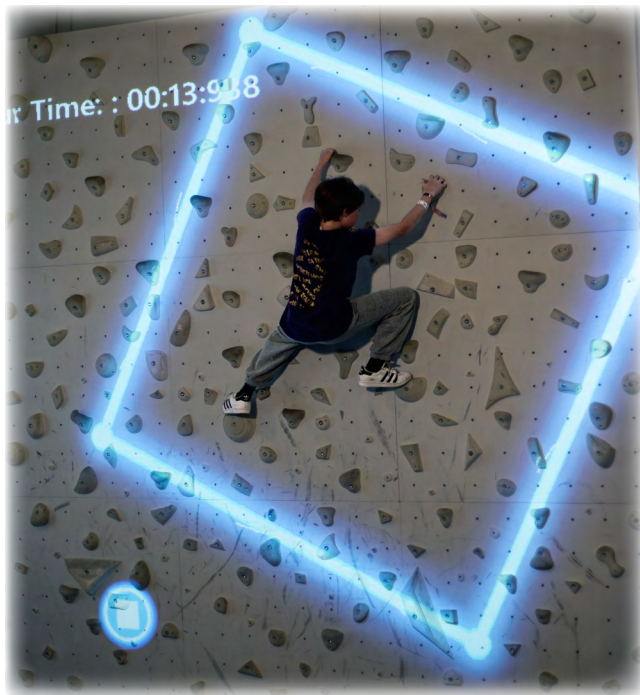


www.augmentedclimbing.com

info@augmentedclimbing.com

Facebook: [@AugmentedClimbingWall](https://www.facebook.com/AugmentedClimbingWall)

Twitter: [@AugmentedClimb](https://twitter.com/AugmentedClimb)



The Challenge

Augmented Climbing Wall is the world's first global gaming platform for climbing and bouldering walls intended to be used in climbing walls, activity parks, entertainment centres and fitness gyms. It combines projected graphics and body tracking to create interactive games and training applications.

The interactive climbing wall was developed as part of a research project at Aalto University, Finland, by avid climber Dr Raine Kajastila. The objective of his research was to develop a climbing wall that accelerates the learning of motor skills while making the monotonous components of practice enjoyable and fun.

Having spent three and a half years developing the interactive solution, Dr Kajastila set up Valo Motion Ltd in 2016 and launched Augmented Climbing Walls. The team needed a bright, cost-effective projector to sit at the heart of the solution.



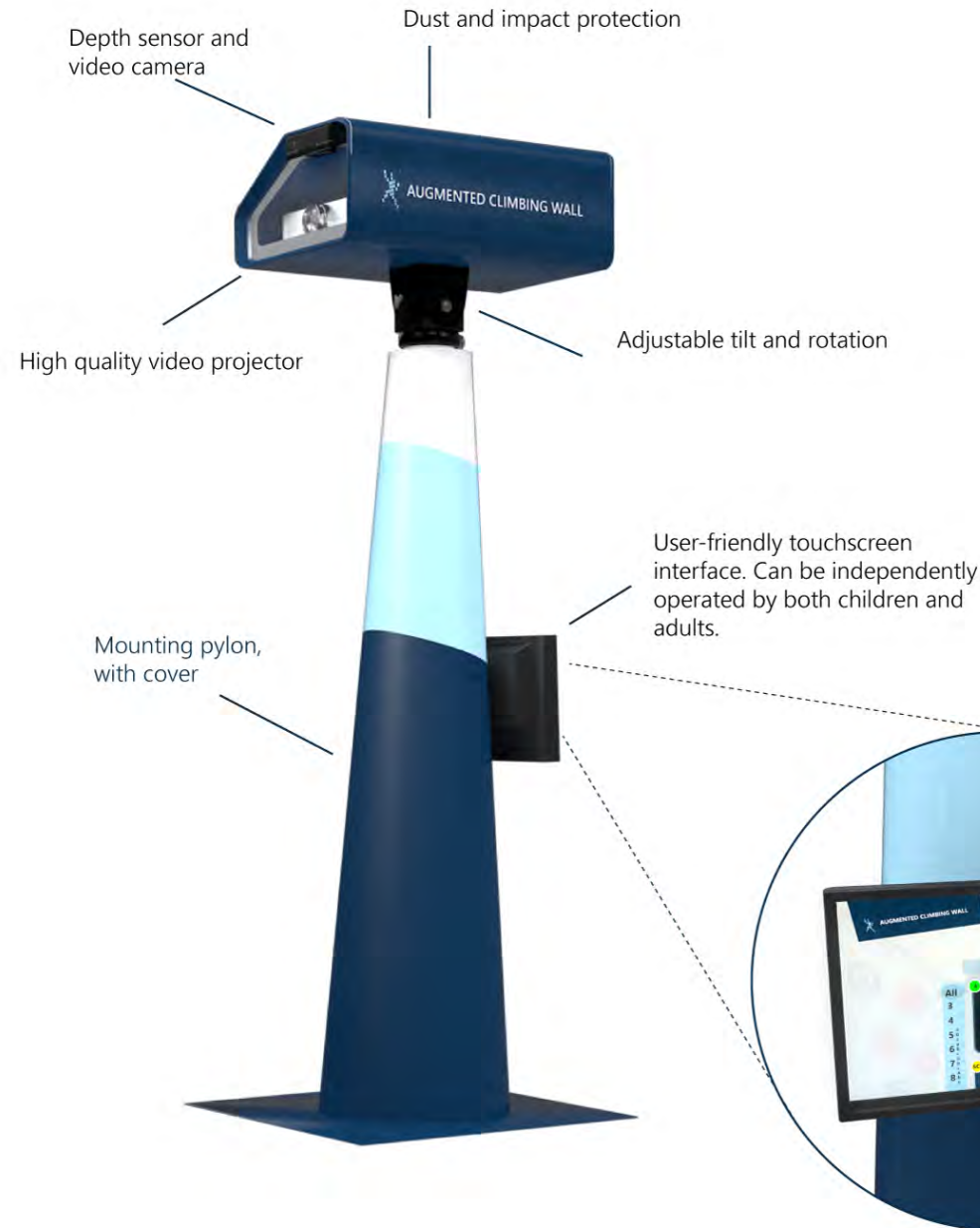
The Solution

Augmented Climbing Walls interactive games and training programs can be customised to any skill level and age. The interactive games, projected onto a white wall with white climbing holds, can be one or two-player games and include Augmented Problems, Whack-A-Bat, Sparks and the popular Climball (Pong). In addition, it can project footage of climbers 'working problems' as training aids. The sophisticated system is programmed to recognise individual human body parts, making the games responsive to climbers' movements.

Each Augmented Climbing Wall uses a bright 6,000-lumen X605 Optoma projector, an Xbox Kinect – a motion tracking camera using Valo Motion's own computer vision algorithms and a powerful customised Intel PC running software developed by the team.

The electronics, set within a custom enclosure, is either installed on a mounting pylon which has adjustable tilt and rotation to get the imagery in exactly the right position or can be mounted to a wall or ceiling. The user-friendly touchscreen interface can be independently operated by both children and adults.

As part of the whole solution, operators receive a subscription to the cloud service where they can monitor and control the wall remotely. This provides analytics on the hardware – such as the temperature of the projector, which games are popular and allows operators to project bespoke marketing content such as logos.



The Optoma X605 has a centre-lens design, full lens shift and three interchangeable lens options including an off-axis short throw lens. This XGA resolution model produces 6,000 ANSI lumens of brightness with superb image quality.



X605



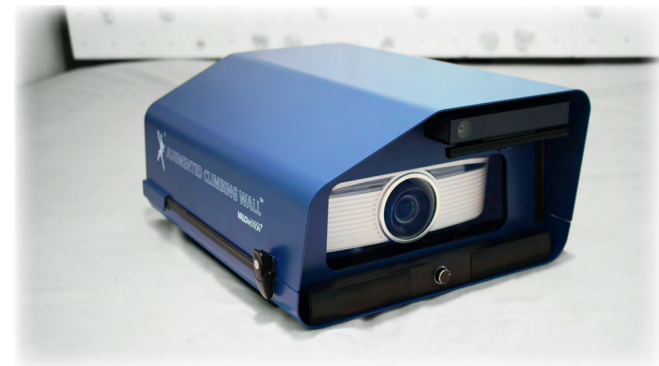
The games and applications make the training fun, motivate and give feedback to help you become a better climber.

Even small walls can have hundreds of distinct routes and games that create new fun challenges for climbers. This has not just been adopted by climbing walls across the globe but also by visitor centres, shopping malls and events as an added attraction. The beauty of the system is that they can add marketing messages to the wall such as sponsor logos.

We chose the X605 to sit at the heart of the solution because it has a great price to quality ratio, great reliability and produces outstanding brightness.



The founder of Augmented Climbing Walls, Dr Raine Kajastila



X605 in casing

The Results

Augmented Climbing Walls has gone down a storm across the globe with walls now installed in Norway, Sweden, Finland, Russia, UK, France, Germany in Europe, as well as Canada, USA, South Korea, Singapore and Australia and with upcoming installations in many more countries.

For a full list of locations visit: www.augmentedclimbing.com/locations

Raine said:

“ We have had an absolutely brilliant, overwhelming response from both climbers and operators. ”

Climbing walls are creating new events with the solution to attract more customers and are seeing climbers coming back more often. Bouldering is a very social activity with groups of climbers helping each other as they ‘work problems’. These interactive games take this social side to a whole new level and allow climbing walls to bring all sorts of new challenges into the mix.

By creating a memorable and unique experience, shopping centres with Augmented Climbing Walls have seen a greater footfall and often use the marketing feature to promote key messages. Gyms have also embraced the interactive wall as a new diverse fitness experience to attract and retain fitness enthusiasts.

Raine added:

“ The Augmented Climbing Wall is always under active development. New games and features are being developed all the time to ensure the system stays fresh. ”



Jump Ninja

As well as the Augmented Climbing Wall, Jump Ninja has around 50 interconnecting trampolines in its trampolining park and a Hurricane Simulator Booth. This is open Monday to Sunday, every day from 10am to 8pm with open jump, fitness and little ninja sessions running throughout the week and a teen night on Fridays. Visit the website for session times.



www.jumpninja.co.uk

Unit 1, Red Rose Retail Park, Regent
Road, Manchester, M5 3GR
Tel: 0161 872 0222

enquiries@jumpninja.co.uk

Facebook: [@jumpninja](https://www.facebook.com/jumpninja)

Twitter: [@Jumpninjapark](https://twitter.com/Jumpninjapark)

Jump Ninja in Manchester is one of two centres in the UK with an Augmented Climbing Wall. Hailey Edwards is the General Manager at the centre. She said: “We launched Jump Ninja in April with both the Augmented Climbing Wall, interconnected trampolines and obstacle course. Our customers’ response to the wall has been incredibly positive. I hadn’t expected it to be as popular as it is. The children love it but it is also attracting serious climbers to our centre.

“We are seeing more groups, such as local climbing clubs, coming and spending several hours training on the wall. So, it is attracting groups and individual climbers that wouldn’t necessarily have considered coming to the trampolining park.”

Visitors can book online to simply climb on the interactive climbing wall or they can get a combined ticket with trampolining.

Hailey commented: “It’s all about fitness isn’t it? You burn a massive amount of calories trampolining – then combining your cardio activity with climbing uses a whole load of other muscles.”

Commenting on how easy the system is to use, Hailey added:

“It is really easy for children to use. All of the games are on a monitor for them to select and we have a member of staff on standby in case they need help. The most popular game for our younger customers is Whack a Bat. The Sparks game is a little trickier and more challenging. So, there is something for everyone!”



Climber at Jump Ninja





Optoma Europe Limited
Registered Office at 42 Caxton Way, Watford Business Park, Watford, WD18 8QZ, United Kingdom
Tel: +44 (0) 1923 691800
Fax: +44 (0) 1923 691888
www.optoma.com

For more information on Optoma solutions, visit www.optoma.com

The above information regarding third party evaluation and recommendation provided in this document is for your information. Since third parties provide the information to Optoma Europe Limited ("Optoma") and Optoma relies on the information, Optoma makes no guarantee that such information is reliable.

Any third party products or services that are provided with any Optoma product are provided "as is". Optoma makes no representation, warranty or guarantee whatsoever in relation to the third party products or services and Optoma assumes no liability whatsoever in relation to the third party products and services.

Copyright © 2014, Optoma and its logo is a registered trademark of Optoma Corporation. Optoma Europe Limited is the licensee of the registered trademark. All other product names and company names used herein are for identification purposes only and may be trademarks or registered trademarks of their respective owners. Errors and omissions excepted, all specifications are subject to change without notice. DLP®, BrilliantColor™ and the DLP logo are registered trademarks of Texas Instruments. All images are for representation purposes only and may be simulated.

Image copyright © Augmented Climbing Wall