

# Waurin

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Waurin (euphonious acronym for: Waterloo Augmented Reality Initiative; pronounced “Warren”) is a [social club](#) at the [University of Waterloo](#) in [Waterloo, Ontario, Canada](#). Currently, the club is the main facilitator of [Augmented Reality \(AR\) Gaming](#) on campus.

Originally an [academic club](#), Waurin was founded in January 2012 by uWaterloo undergraduates [Joseph Galamaheit](#), [Boris Lenovskiyvich](#), [Valerie Seo](#), and [Simon Alfred](#). The club was established as a research and development cooperative for Boris Lenovskiyvich’s AR system patent. Waurin completed the development of their flagship software platform [ZAP’EM](#) (Zombie, Adventure, and Puzzle Emulator Matrix) in March 2013. This allowed for total immersion AR gaming using modified [Panasonic](#) AR glasses, an unprecedented advancement in the field. ZAP’EM and its bundled flagship games [3D Tetris](#) and [Zombie Invasion](#) became a worldwide phenomenon in summer 2013. Waurin, with the help of rapidly declining of hardware costs in June 2013, catapulted the [Reality Enhancement Revolution](#)<sup>[1]</sup>.

Waurin (Club)	
<b>*WAURIN</b> _____	
<b>Years active</b>	2012- Present
<b>Members</b>	500
<b>President</b>	Ashok Kumar
<b>Location</b>	Waterloo, Ontario
<b>Institution</b>	University of Waterloo
<b>Website</b>	<a href="http://www.waurin.feds.ca">www.waurin.feds.ca</a>

Waurin, specifically its founders, executive team, and core development team, was the precursor to [Vitruvian Augmented Reality Systems Limited inc.](#) founded in July 2013 (vitruvian ars). After the departure of the club’s main executives and original development team to vitruvian, Waurin became a purely social club and uWaterloo’s main AR gaming coordinator. Waurin is still vitruvian’s primary product testing group.

Although there have been concerns about the continuation of AR gaming on campuses<sup>[2]</sup>, Waurin has operated with minimal controversy over its nine year existence. As of November 2019 Waurin has over 500 members who participate in monthly [massively-multiplayer](#) AR games at the University of Waterloo.

Waurin was the model of AR development clubs established in Spring 2013 such as [Carit](#) at University of Calgary, [Aarin](#) at Acadia University, and [Quaint](#) at Queens

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University. Thousands of AR clubs across Canada, the United States, Europe, Japan, and Australia are based on the Waurin social model.<sup>[3]</sup>

# HISTORY

## Pre-vitruvian| 2011-2013

Boris Lenovskiyvich filed the first patent for a multiplayer, Augmented Reality (AR), total immersion gaming system using specialized AR glasses with [accelerometers](#), [audio equipment](#) and [networking ability](#) on November 14, 2011 as a freshman [Computer Science](#) Student at the University of Waterloo. In addition, he created the basis for [algorithms](#) that would make AR games and the worlds generated with the systems much more accurate relative to the real world and other players.<sup>[4]</sup> A talented programmer and mathematician, it had been his dream to create a video game system that he could physically play using his voice and his body, but the systems that were available ([smartphones](#) at the time) to him were not satisfactorily immersive. <sup>[5]</sup>

With no plan on how to actually create the system, Lenovskiyvich left the idea alone. That was until a flight to Vancouver on Christmas Eve 2011 when he met Joseph Galamaheit, a second year Knowledge Integration student at the University. The two hit it off immediately, Galamaheit particularly interested in making Lenovskiyvich's dream a reality. They decided to work together to create a cooperative research and development club at the university to produce an advanced operating system (OS) for their own modified AR glasses. They decided on focusing on two different concepts of games, 3D [tetris](#) and a cooperative zombie hunting game, whose content would cover the breadth of features they wanted to incorporate in an AR OS. <sup>[6]</sup>

While Lenovskiyvich nailed down a practical design overview for such a system, Galamaheit designed a development structure for their cooperative. The original cooperative model of Waurin is now one of the most commonly used in the world.<sup>[7]</sup> Galamaheit also invited two others to add expertise to the executive of the future club. First was uWaterloo 3<sup>rd</sup> year [Architecture](#) student Valerie Ming, who is still the lead interaction designer and artist at vitruvian ars; second was 4<sup>th</sup> year uWaterloo [Systems Design Engineering](#) student Simon Alfred, who would design and build the modifications to the [Panasonic AR-5400](#) model<sup>[8]</sup>. Lenovskiyvich took the role of Lead Game Designer and Programmer, and Galamaheit the role of Operations and Marketing Designer. Lenovskiyvich and Galamaheit settled on the name Waterloo Augmented Reality Initiative (Waurin) in early January 2012.

The four had their first live meeting on January 7<sup>th</sup>, 2012, and proceeded into the early development stages of the project the following day. Galamaheit focused on raising funds and recruiting talent for the group. [Research in Motion](#) quickly signed

on as a sponsor, citing the early successes of Augmented Reality software on the Apple iPhone 4g as the reason for the support of local talent. <sup>[9]</sup> Waurin also received funding from the University.

As the initial planning of Lenovskyvich, Seo, and Alfred came to a close, the group started to recruit members to begin development of an AR OS, the AR gaming platform, and the two games themselves. Waurin's initial recruitment was said to be eccentric but highly effective. <sup>[citation needed]</sup> One flyer was based on [Ernest Shakelton's](#) famous 1913 recruitment advertisement<sup>[10]</sup>:

“Looking for:

Talented programmers, artists, engineers, writers, accountants and designers for ambitious project. No wages, long hours, failing grades, and alienation from friends and family assured, safety doubtful.

1. Incredible, earth shattering results 2. ??? and 3. PROFIT!!! in case of success

General Meeting Feb 21.

WAURIN”

The unique [marketing techniques](#) and excitement of the project (attributed to the AR demo and artwork produced by Lenovskyvich and Seo, shown to an overcrowded room of 300 people at the General Meeting)<sup>[11]</sup> forced the executive to have an interview and application process for joining the development group. Waurin was incorporated as a uWaterloo [cooperative club](#) on February 28, 2012 with 35 members and full scale development on the systems began in the Engineering 3 building at the university on March 1<sup>st</sup>. <sup>[12]</sup>

Over the course of 2012, working in the group was much like what was described on the original flyer. Because of member's devotion to the project, under the leadership of an inspiring executive team, the process was very intense. Nonetheless, the club became very close and had some of the most popular and well attended social events on campus. Most of the legendary [eccentric](#) traditions of the club, like the nautical ranking system with the base unit of “flunky”, were established in the original team.<sup>[13]</sup>

Waurin completed the proprietary AR platform (both the OS and the hardware) [ZAP'EM 1.0](#) (Zombie, Adventure, and Puzzle Emulator Matrix) after only one year of development, in March 2013. This tremendous accomplishment speaks to the unprecedented commitment and determination of the members involved, and the vision of the executive team. The completion of the platform allowed for the accelerated development of the Beta versions of their flagship game titles, [3D Tetris](#) and [Zombie Invasion](#), which were both complete by May of that year.

In late May 2013, full scale testing of the two games begun. The entire club quickly realized that what they had created was “unprecedented and very special” [citation needed], exceeding even Lenovskiyvich’s initial imagination of the concept. Though Waurin had been subject to media attention at the beginning of 2013, it drew even more attention during the highly visible May testing on campus. Waurin opened beta testing to Waterloo locals on June 14, 2013. Within two days the waiting list to join the beta grew to over 9 000 people, only 4000 of which were University of Waterloo students.<sup>[14]</sup>

On June 27, 2010 Panasonic announced the immediate release of its next generation AR glasses system, *Immerex*. At a quarter of the price of previous systems, and integrating most of the features of Waurin’s custom model, the club would be able to expand beyond its mere 30 sets of Custom glasses.<sup>[15]</sup> Realizing the opportunity to mass produce and introduce their product to the mainstream market, Galamaheit, Lenovskiyvich, Seo, and Alfred established Vitruvian Augmented Reality Systems Limited inc. (vitruvian ars) as a member company of *Hollybank IDC™* on June 30, 2013. Nearly the complete membership of Waurin went to work at vitruvian, and Waurin went into stasis. vitruvian ars immediately released a ZAP’EM 1.0 OS game development toolkit bundled with *3D Tetris* and *Zombie Invasion* to augmented reality clubs that were springing up on campuses across North America. vitruvian signed a one-year contract with Panasonic to be the sole software provider for Immerex.

International demand for the vitruvian ZAP’EM System for Immerex grew exponentially almost overnight, and the viral nature of its popular success caught all other AR Entertainment players completely off guard. Because of its proprietary technology, the *ZAP’EM-Immerex* system was unchallenged in the marketplace for the entirety of summer 2013, and Panasonic struggled to meet demand for the system until 2015.<sup>[16]</sup> Meanwhile, new content was being developed for the system by clubs internationally with the development toolkit and massive games were being coordinated on the nearly empty campuses across the continent. At this time, vitruvian got to work on development of next-generation AR software and hardware. The well-documented, international AR phenomenon in mid-2013 has come to be known as “Alternative Summer”<sup>[17]</sup> or, in reference to the popularity of *Zombie Invasion*, “Summer of the Undead”<sup>[18]</sup>

## **Post-vitruvian | 2013-Present**

The establishment of vitruvian ars and departure of nearly all original members of Waurin marked the end of the club as a research and development and cooperative. After weeks of stasis, Waurin was reborn as a social club, the de facto student group for organizing large scale AR gaming at the University of Waterloo. Waurin is the most popular model for a mid-size AR social club, and clubs in its image can be

found all over the world. The club is also the primary test pool for new vitruvian ars products. <sup>[19]</sup>

## Games Played

These are the main games the club currently organizes events for:

### *3D Tetris* (vitruvianSoftworks):

Like the original 2d version, a puzzle game, played cooperatively with puzzle pieces composed of multiple blocks falling to the ground; players manipulate the orientation of the falling pieces with their hands in order to create single block layers filling an arbitrary area on the ground; when completed a single block layer, layer deletes; failure to create complete layers allows stacks of blocks to become too high, beyond the players line of sight, resulting in failure. Can be played with any size of block. Often played with the Environment buildings.

### *Zombie Invasion* (vitruvianSoftworks):

Cooperative zombie hunting game; surrounding world (players, buildings) procedurally generated as post apocalyptic, dangerous running zombies added procedurally, non players retextured/ rendered as ghosts; AR glasses networked between players to play in the same generated instance, use of “gun” peripherals to destroy zombies, zombie attack in player results on expulsion from game. Only played outside, missions often involve successful getting from the South Campus Hall to the SLC with all members of the party intact for highest score.

### *Humber's Odyssey* (vitruvianSoftworks):

Fantasy Roleplaying game occurring in world retextured as fantasy medieval; quests given to find “artifacts” in “dungeons” (indoor public areas); battle procedurally generated mythical beasts with imaginary swords controlled by hand movement; non-players textured as elves; successful quests result in player receiving “experience points”

### *Ships of the Line (I, II, III, IV, Space)* (US Navy Digital Recruitment):

Simulation of 18<sup>th</sup> century, Second World War, alternate Cold War, Second Korean War and futuristic interstellar naval warfare respectively. Players assume the role of bridge officers and command warships of various kinds either against other players or cooperatively against AI enemies. Each player, or team of player bridge officers, commands a room retextured as the bridge of a warship. Largest battles at uWaterloo have included several hundred warships. Usually played with other “officers” to allow social element during long games (up to 48 hours), and so shifts can occur.

### *Combat: Advanced* (Valve):

Team-based capture the flag retextured as cartoon version of mid-20<sup>th</sup> century combat; uses “gun” peripheral to tag other players

### *Streets of London* (Bethesda):

Roleplaying mystery game; world retextured as industrial era London; procedurally placed, pre-made quests; speak to virtual characters to gather information to solve mysteries

### *Grand Attack Strategy: Rome* (Sid Meier):

Strategy game wherein players battle each other's armies by commanding miniature scale Roman legions in open areas like St. Pauls green

### *Zeus* (Maxis):

By themselves, or cooperatively, players use a special "lightening bolt tool" peripheral to create their own worlds and populate them with what they wish; uses advanced modeling and animation techniques.

## See Also

- Joseph Galamaheit
- Boris Lenovskyvich
- Valerie Seo
- Simon Alfred (Lockheed Martin)
- vitruvian ars
- vitruvian ars People
- List of AR gaming clubs in North America
- Carit
- Quaint
- Arin
- FEDS University of Waterloo
- Panasonic Immerex
- Hollybank IDC

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## External Links

- <http://www.waurin.feds.ca>
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A short story by Geoffrey Evamy Hill  
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