

Bullet Blitz

Victor Gasior
Martin, Tennessee
vicagasi@ut.utm.edu

Blade Johnson
Martin, Tennessee
davbjohn@ut.utm.edu

Andrew Newbill
Martin, Tennessee
andjnewb@ut.utm.edu

Lucky Woods
Martin, Tennessee
lucjwood@ut.utm.edu

ABSTRACT

Bullet Blitz is a multiplayer first-person shooter (FPS) game based on classical shooters from the past. In the game, players will assume the roles of intelligent rodents armed with an array of weapons. This project is built on Unreal Engine 5 while using assets made from Blender and Ultimate Doom Builder. Bullet Blitz is meant to engage players in a fast paced FPS game with a emphasis on fast movement to keep players in fights with minimal downtime. Players will fight each other or AI enemies on different kinds of maps, find weapons, and eliminate other opponents to score points.

Bullet Blitz has networking capabilities for multiplayer interactions, reliable damage handling, Artificial Intelligence enemies, and efficient spawning systems to keep the action flowing smoothly. Beyond the core gameplay elements, Bullet Blitz features a retro shooter aesthetic with rodent-themed player models and unique UI elements. Multiple kinds of maps will be available to play on, as well as various environments in those maps that require the player to use the movement systems in order to gain an advantage over other players. The weapons are balanced into two groups, primaries and power weapons. While primaries are common and the player can equip two, power weapons are much stronger, but are combined with the map's environment, making them only accessible via the movement system. Each weapon is also given a different respawn time, encouraging players to continue to use the movement and keep up their momentum so they can reach weapons before their opponents.

Author Keywords

Authors' choice; of terms; separated; by semicolons; include commas, within terms only; this section is required.

1. INTRODUCTION

Bullet Blitz is a multiplayer first person shooter (FPS) game project made with Unreal Engine 5. The game is an arena shooter where all of the players are placed in an arena as rodents going around jumping around the maps at high speeds and shooting at each other with different unique weapons that spawn around the map. The core gameplay and idea for the game was inspired by many classic arena shooters, but the main influence was from Quake.

The Developers of the game are: Victor Gasior, Blade Johnson, Andrew Newbill, and Lucky Woods. We have put our focus into making sure the game runs as smoothly as possible and put in as much as possible to make it like many classical arena shooters of the past. The game is separated into four important categories of focus: core gameplay, networking, Artificial Intelligence (AI), and User Interface design along with customizable settings. Gameplay will go over core concepts

of the game such as weapons, movement, and map design. Networking will go over how the players will be able to play together. Artificial Intelligence part of the paper will go over how the enemy AI's will be controlled to act similarly to a player. User Interface will go over the interface the players will be seeing constantly along with settings for a player to have their own preferred play style.

2. TECHNOLOGY

For Bullet Blitz, Unreal Engine 5 (UE5) was used for the creation of the main game. Main parts made from UE5 were: base game play movement, animations, networking, and AI. Networking is done so players from different devices can play the game at the same time for the normal PvP experience. Animations were done for the reloading and firing of the weapons to make each one seem different from the rest with unique styles. AI was put into the game as to have players be able to fill in spaces for if there are not enough players for a match.

Ultimate Doom Builder (UDB) was used as the main platform to create the maps for the game as it is a program for making FPS maps. The main hurdles were importing maps from UDB to UE5, but there are platforms out there to help with the importing of the files. The system was used as it is an easy way to make maps instead of spending multiple hours on end to make different maps on Unreal Engine

Blender and Maya were both used as a 3D modeling platform for making the weapons of the game and the player models respectively as they both allows users to create different forms of items on there. Blender was also used to help import the maps from UDB to UE5 with a much more seamless transition.

3. PAGE SIZE AND COLUMNS

On each page your material should fit within a rectangle of 7 × 9.15 inches (18 × 23.2 cm), centered on a US Letter page (8.5 × 11 inches), beginning 0.85 inches (1.9 cm) from the top of the page, with a 0.3 inches (0.85 cm) space between two 3.35 inches (8.4 cm) columns. Right margins should be justified, not ragged. Please be sure your document and PDF are US letter and not A4.

4. TYPESET TEXT

The styles contained in this document have been modified from the default styles to reflect ACM formatting conventions. For example, content paragraphs like this one are formatted using the Normal style.

L^AT_EX sometimes will create overfull lines that extend into columns. To attempt to combat this, the .cls file has a command, \sloppy, that essentially asks L^AT_EX to prefer underfull lines with extra whitespace. For more details on this,

and info on how to control it more finely, check out <http://www.economics.utoronto.ca/osborne/latex/PMAKEUP.HTM>.

4.1 Title and Authors

Your paper's title, authors and affiliations should run across the full width of the page in a single column 17.8 cm (7 in.) wide. The title should be in Helvetica or Arial 18-point bold. Authors' names should be in Times New Roman or Times Roman 12-point bold, and affiliations in 12-point regular.

See \author section of this template for instructions on how to format the authors. For more than three authors, you may have to place some address information in a footnote, or in a named section at the end of your paper. Names may optionally be placed in a single centered row instead of at the top of each column. Leave one 10-point line of white space below the last line of affiliations.

4.2 Abstract and Keywords

Every submission should begin with an abstract of about 150 words, followed by a set of Author Keywords and ACM Classification Keywords. The abstract and keywords should be placed in the left column of the first page under the left half of the title. The abstract should be a concise statement of the problem, approach, and conclusions of the work described. It should clearly state the paper's contribution to the field of HCI.

4.3 Normal or Body Text

Please use a 10-point Times New Roman or Times Roman font or, if this is unavailable, another proportional font with serifs, as close as possible in appearance to Times Roman 10-point. Other than Helvetica or Arial headings, please use sans-serif or non-proportional fonts only for special purposes, such as source code text.

4.4 First Page Copyright Notice

This template include a sample ACM copyright notice at the bottom of page 1, column 1. Upon acceptance, you will be provided with the appropriate copyright statement and unique DOI string for publication. Accepted papers will be distributed in the conference publications. They will also be placed in the ACM Digital Library, where they will remain accessible to thousands of researchers and practitioners worldwide. See http://acm.org/publications/policies/copyright_policy for the ACM's copyright and permissions policy.

4.5 Subsequent Pages

On pages beyond the first, start at the top of the page and continue in double-column format. The two columns on the last page should be of equal length.

4.6 References and Citations

Use a numbered list of references at the end of the article, ordered alphabetically by last name of first author, and referenced by numbers in brackets. Your references should be published materials accessible to the public. Internal technical reports may be cited only if they are easily accessible (i.e., you provide the address for obtaining the report within your citation) and may be obtained by any reader for a nominal fee. Proprietary information may not be cited. Private communications should be acknowledged in the main text, not referenced (e.g., "[Borriello, personal communication]").

References should be in ACM citation format: http://acm.org/publications/submissions/latex_style. This includes citations

Name	Test Conditions		
	First	Second	Final
Marsden	223.0	44	432,321
Nass	22.2	16	234,333
Borriello	22.9	11	93,123
Karat	34.9	2200	103,322

Table 1. Table captions should be placed below the table. We recommend table lines be 1 point, 25% black. Minimize use of table grid lines.

to internet resources according to ACM format, although it is often appropriate to include URLs directly in the text, as above.

5. SECTIONS

The heading of a section should be in Helvetica or Arial 9-point bold, all in capitals. Sections should *not* be numbered.

5.1 Subsections

Headings of subsections should be in Helvetica or Arial 9-point bold with initial letters capitalized. For sub-sections and sub-subsections, a word like *the* or *of* is not capitalized unless it is the first word of the heading.

5.1.1 Sub-subsections

Headings for sub-subsections should be in Helvetica or Arial 9-point italic with initial letters capitalized. Standard \section, \subsection, and \subsubsection commands will work fine in this template.

6. FIGURES/CAPTIONS

Place figures and tables at the top or bottom of the appropriate column or columns, on the same page as the relevant text (see Figure ??). A figure or table may extend across both columns to a maximum width of 17.78 cm (7 in.).

Captions should be Times New Roman or Times Roman 9-point bold. They should be numbered (e.g., "Table 1" or "Figure ??"), centered (if one line) otherwise justified, and placed beneath the figure or table. Please note that the words "Figure" and "Table" should be spelled out (e.g., "Figure" rather than "Fig.") wherever they occur. Figures, like Figure ??, may span columns and all figures should also include alt text for improved accessibility. Papers and notes may use color figures, which are included in the page limit; the figures must be usable when printed in black-and-white in the proceedings.

The paper may be accompanied by a short video figure (we recommend staying within five minutes in length). However, the paper should stand on its own without the video figure, as the video may not be available to everyone who reads the paper.

6.1 Inserting Images

When possible, include a vector formatted graphic (i.e. PDF or EPS). When including bitmaps, use an image editing tool to resize the image at the appropriate printing resolution (usually 300 dpi).

7. QUOTATIONS

Quotations may be italicized when "*placed inline*".

Longer quotes, when placed in their own paragraph, need not be italicized or in quotation marks when indented.

8. LANGUAGE, STYLE, AND CONTENT

The written and spoken language of SIGCHI is English. Spelling and punctuation may use any dialect of English (e.g., British, Canadian, US, etc.) provided this is done consistently. Hyphenation is optional. To ensure suitability for an international audience, please pay attention to the following:

- Write in a straightforward style.
- Try to avoid long or complex sentence structures.
- Use common and basic vocabulary (e.g., use the word “unusual” rather than the word “arcane”).
- Briefly define or explain all technical terms that may be unfamiliar to readers.
- Explain all acronyms the first time they are used in your text—e.g., “Digital Signal Processing (DSP)”.
- Explain local references (e.g., not everyone knows all city names in a particular country).
- Explain “insider” comments. Ensure that your whole audience understands any reference whose meaning you do not describe (e.g., do not assume that everyone has used a Macintosh or a particular application).
- Explain colloquial language and puns. Understanding phrases like “red herring” may require a local knowledge of English. Humor and irony are difficult to translate.
- Use unambiguous forms for culturally localized concepts, such as times, dates, currencies, and numbers (e.g., “1–5–97” or “5/1/97” may mean 5 January or 1 May, and “seven o’clock” may mean 7:00 am or 19:00). For currencies, indicate equivalences: “Participants were paid ₩ 25,000, or roughly US \$22.”
- Be careful with the use of gender-specific pronouns (he, she) and other gendered words (chairman, manpower, man-months). Use inclusive language that is gender-neutral (e.g., she or he, they, s/he, chair, staff, staff-hours, person-years). See the *Guidelines for Bias-Free Writing* for further advice and examples regarding gender and other personal attributes. Be particularly aware of considerations around writing about people with disabilities.
- If possible, use the full (extended) alphabetic character set for names of persons, institutions, and places (e.g., Grøn-bæk, Lafrenière, Sánchez, Nguyễn, Universität, Weißen-bach, Züllighoven, Århus, etc.). These characters are already included in most versions and variants of Times, Helvetica, and Arial fonts.

9. ACCESSIBILITY

The Executive Council of SIGCHI has committed to making SIGCHI conferences more inclusive for researchers, practitioners, and educators with disabilities. As a part of this goal, the all authors are asked to work on improving the accessibility of their submissions. Specifically, we encourage authors to carry out the following five steps:

1. Add alternative text to all figures
2. Mark table headings
3. Add tags to the PDF
4. Verify the default language

5. Set the tab order to “Use Document Structure”

For more information and links to instructions and resources, please see: <http://chi2016.acm.org/accessibility>. The \hyperref package allows you to create well tagged PDF files, please see the preamble of this template for an example.

10. PAGE NUMBERING, HEADERS AND FOOTERS

Your final submission should not contain footer or header information at the top or bottom of each page. Specifically, your final submission should not include page numbers. Initial submissions may include page numbers, but these must be removed for camera-ready. Page numbers will be added to the PDF when the proceedings are assembled.

11. PRODUCING AND TESTING PDF FILES

We recommend that you produce a PDF version of your submission well before the final deadline. Your PDF file must be ACM DL Compliant. The requirements for an ACM Compliant PDF are available at: <http://www.scomminc.com/pp/acmsig/ACM-DL-pdfs-requirements.htm>.

Test your PDF file by viewing or printing it with the same software we will use when we receive it, Adobe Acrobat Reader Version 10. This is widely available at no cost. Note that most reviewers will use a North American/European version of Acrobat reader, so please check your PDF accordingly.

12. CONCLUSION

It is important that you write for the SIGCHI audience. Please read previous years’ proceedings to understand the writing style and conventions that successful authors have used. It is particularly important that you state clearly what you have done, not merely what you plan to do, and explain how your work is different from previously published work, i.e., the unique contribution that your work makes to the field. Please consider what the reader will learn from your submission, and how they will find your work useful. If you write with these questions in mind, your work is more likely to be successful, both in being accepted into the conference, and in influencing the work of our field.

13. ACKNOWLEDGMENTS

Sample text: We thank all the volunteers, and all publications support and staff, who wrote and provided helpful comments on previous versions of this document. Authors 1, 2, and 3 gratefully acknowledge the grant from NSF (#1234–2012–ABC). *This whole paragraph is just an example.*

14. REFERENCES FORMAT

Your references should be published materials accessible to the public. Internal technical reports may be cited only if they are easily accessible and may be obtained by any reader for a nominal fee. Proprietary information may not be cited. Private communications should be acknowledged in the main text, not referenced (e.g., [Golovchinsky, personal communication]). References must be the same font size as other body text. References should be in alphabetical order by last name of first author. Use a numbered list of references at the end of the article, ordered alphabetically by last name of first author, and referenced by numbers in brackets. For papers from conference proceedings, include the title of the paper and the name of the conference. Do not include the location of the conference or the exact date; do include the page numbers if available.

Citing something[?]. Citing something else.[?]