



3D MASCOT DESIGN FOR PORSIMAPTAR EVENT

Putra, Yusuf Fadhilah; Bangkit Sanjaya

Department of Fine Arts, Universitas Negeri Semarang

Article Info

Article History

Received: Juni 2026

Approved: July 2026

Published: August 2026

Keywords:

Mascot, 3D, Visual Identity, Porsimaptar, AKPOL

Abstract

A mascot is a visual identity element that plays an important role in shaping the image and appeal of an event. Porsimaptar (Sports and Arts Week for Students, Pupils, and Cadets) is a prestigious annual competition organized by the Semarang Police Academy (AKPOL). The official Porsimaptar logo features the silhouette of Gajah Mada, a national hero who is a symbol of unity and fighting spirit, but until now has not been realized in the form of a representative three-dimensional (3D) mascot. This design aims to create a 3D mascot with the character of Gajah Mada that elevates the visual identity of the Porsimaptar logo while presenting a fun and friendly impression to all participants. The method used is the Design Thinking approach with five stages: Empathize, Define, Ideate, Prototype, and Test. The design process was carried out using Blender software as the main medium for 3D modeling and rendering. This 3D mascot is expected to be a consistent and adaptive visual asset for various Porsimaptar promotional media.

© 2026 Universitas Negeri Semarang

✉ Correspondence address: Departments of Fine Arts, Faculty of Art and Language, Universitas Negeri Semarang
Email: yusuffadhilahputra@gmail.com

ISSN 2252-7516
E-ISSN 2721-8961

INTRODUCTION

Visual identity is a fundamental element in the communication strategy of an institution or event to the public. One of the most effective, memorable, and emotionally compelling components of visual identity is the mascot. A mascot is a visual character designed to represent the values, spirit, and distinctive characteristics of an entity, whether an organization, brand, sports team, or major event (Hidayah et al., 2022). The presence of a mascot does not merely function as visual decoration, but also as a communication medium capable of conveying complex messages intuitively and emotionally to diverse audiences. Mascot design for a specific event has been shown to strengthen the image and appeal of the event while facilitating audience acceptance of the visual identity it carries (Yoga et al., 2023).

Sports competition events represent one form of activity with a strategic role in society. Referring to the National Sports System Law Number 3 of 2005, Chapter II Article 4, the organization of sports events aims to maintain and improve health, fitness, achievement, and the quality of human resources, while instilling moral values, sportsmanship, and discipline, as well as strengthening national unity (Fahmi et al., 2024).

Porsimaptar (Sports and Arts Week for Students, Pupils, and Cadets) is one of the prestigious annual competition events organized by the Semarang Police Academy (Akpola). This event involves thousands of participants from various institutional backgrounds competing across multiple sports and arts disciplines. The official Porsimaptar logo visually features the silhouette of Gajah Mada, the grand prime minister of the Majapahit Kingdom, widely recognized as a symbol of Nusantara unity and an unyielding fighting spirit. The selection of this figure in the event logo reflects Porsimaptar's aspiration as a platform for unity and healthy cross-institutional competition.

Although the Porsimaptar logo already carries strong symbolic value through the silhouette of Gajah Mada, the potential of this character has not been optimally developed into a representative and digitally adaptive three-dimensional (3D) mascot. The use of 3D mascots in modern events has become an increasingly pressing need, given the high frequency of visual

content consumption across various platforms such as LED displays. A 3D-based mascot offers high flexibility as it can be animated, rendered from multiple angles, and consistently adapted to various media formats, making it effective in attracting audience interest (Rahardja et al., 2015).

The chibi art style was chosen in this design as a response to the needs of Porsimaptar's audience, the majority of whom are young people. Chibi is a Japanese illustration and character modeling style featuring large head proportions with a small body, expressive facial features, and an appearance that inherently conveys a cute, friendly, and fun impression (Shaula & Hasyim, 2017). The use of the chibi style in mascot design has proven effective in enhancing the emotional engagement of young audiences, with facial expressions and small body proportions being the dominant factors that produce a cute and enjoyable impression (Laurencia, 2025). In the context of Porsimaptar, the chibi style allows the sacred historical figure of Gajah Mada to be reintroduced in a more accessible, warm, and relevant manner for Generation Z.

Previous research by Yuda et al. (2022) demonstrated that mascots designed with a deep consideration of institutional values are capable of significantly increasing brand awareness. Meanwhile, Ahmad Salahudin (2023) affirmed that the integration of cultural and historical references in mascot design has been proven to strengthen the relevance and depth of meaning of a character in the eyes of users.

Blender, as an open-source software with a comprehensive ecosystem for modeling, sculpting, texturing, rigging, and rendering, was selected as the primary production tool due to its proven effectiveness in producing realistic and detailed 3D visualizations (Ferdianto et al., 2024). In terms of methodology, Design Thinking was applied as the design framework due to its iterative, collaborative, and human-centered nature, ensuring that every design decision is rooted in the real needs of the stakeholders or client (Brown, 2008). This article systematically presents the process of designing the 3D Gajah Mada mascot for Porsimaptar using the Design Thinking method, from the user research stage to the final product ready for use.

METHODS

This study employs the Design Thinking approach method developed by IDEO and popularized by Stanford University's d.school, consisting of five stages: Empathize, Define, Ideate, Prototype, and Test. This method was chosen for its iterative, collaborative, and user-centered nature, making it highly relevant to the process of designing visual characters that must meet the expectations of various stakeholders (Brown, 2008). Alrazi & Rachman (2021) demonstrated that the application of Design Thinking to digital visual media design significantly improves the relevance and quality of design output in relation to user needs. The application of Design Thinking specifically to mascot design has also been shown to help designers systematically capture audience preferences and produce characters that are relevant to regional or institutional identity (Abdurrohman & Nurfitri, 2023).

Third, an online questionnaire was administered to 10 independent audience members who had attended the event and had no involvement in the design process. The questionnaire evaluated mascot recall, recognition of Gajah Mada representation, and visual legibility on the LED screen.

In the Empathize stage, primary data was collected through in-depth interviews with three vendor informants responsible for managing the visual aspects of the Porsimaptar event, namely Azzam Albanna, Maynard Ryan, and Nur Syafiq. These three informants served as a communication bridge between the Porsimaptar event committee as the client and the designer. Direct observation of the official Porsimaptar logo and a literature study of the historical figure of Gajah Mada were also conducted to build a thorough understanding of the relevant visual attributes.

The Design Thinking framework was operationalized as a sequential but iterative design process. The Empathize stage was used to identify stakeholder needs, historical references, audience characteristics, and technical requirements. These findings were synthesized during the Define stage to formulate the main design problem and design criteria. The criteria subsequently guided visual concept generation and alternative selection during the Ideate stage. The selected concept was

translated into a three-dimensional character during the Prototype stage, while the Test stage evaluated the resulting mascot in terms of identity representation, visual quality, audience response, and technical performance in its actual implementation context. Feedback obtained during testing was used to identify strengths and aspects requiring further refinement. Thus, each stage generated outputs that served as inputs for the subsequent stage rather than functioning as separate design activities.

In the Define stage, all findings from the empathy stage were analyzed using affinity mapping to group findings into four thematic clusters: Institutional Identity, Historical Representation, Visual Style, and Technical Requirements. The synthesis produced a problem statement that guided the entire subsequent design process.

In the Ideate stage, concept exploration was conducted through brainstorming sessions, mind mapping, and the development of two alternative character sketches, which were then evaluated based on their relevance to the Porsimaptar logo, representation of Gajah Mada's historical values, suitability of the chibi style for the target audience, and technical feasibility (Armayuda & Pragadeva, 2020).

The Prototype stage was the primary production stage using Blender software on a laptop equipped with an AMD Ryzen 7 5th generation processor, 8GB RAM, and an AMD Radeon GPU. The production workflow included box modeling, sculpting, UV unwrapping, texturing, rigging using Rigify, and final rendering.

The Test stage was conducted through four complementary evaluation approaches to minimize confirmation bias and strengthen the validity of the assessment.

First, in-depth interviews were conducted with the three vendor informants (Azzam Albanna, Maynard Ryan, and Nur Syafiq) as the parties connecting communication between the designer and the event committee, covering four aspects: committee satisfaction, visitor appeal, functional suitability on LED media, and consistency of visual identity representation.

Second, an expert review was conducted by Wandah Wibawanto, a lecturer in Visual Arts at Universitas Negeri Semarang, as an independent

evaluator not involved in the design process. The evaluation covered character design principles, color harmony, and suitability as an institutional visual asset.



Figure 1. Meeting with Vendor at Kafe Bhara Daksa Akpol Semarang

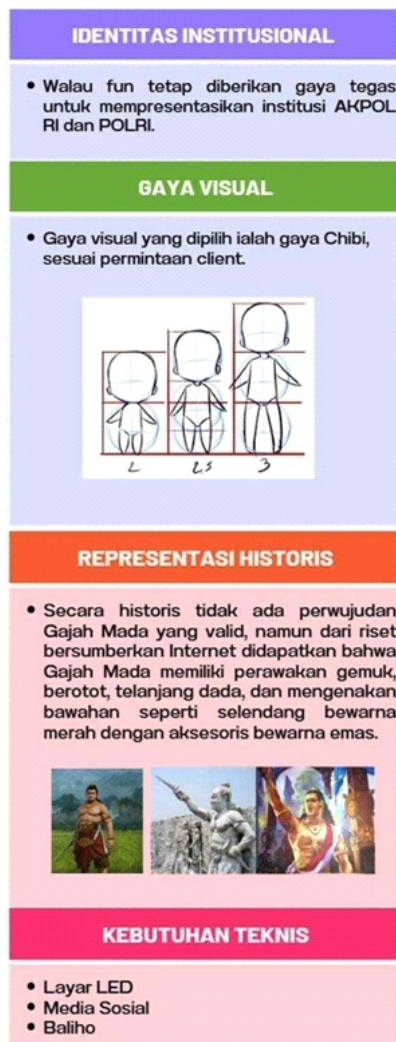


Figure 2. Affinity Mapping Results from the Define Stage

Third, brief interviews were conducted with 10 independent audience members who were present at the event on the day of implementation and had no involvement in the design or briefing process, in order to obtain evaluative perspectives from entirely external parties.

Fourth, visual documentation observation was conducted using footage of the mascot animation displayed on the LED screen at the Porsimaptar opening ceremony, analyzed to assess character legibility and the collective audience attention response under large-scale display conditions. All evaluation results were analyzed using descriptive qualitative methods.

RESULTS AND DISCUSSION

Based on in-depth interviews with three Porsimaptar vendor informants, namely Azzam Albanna, Maynard Ryan, and Nur Syafiq, it was found that the silhouette of Gajah Mada on the Porsimaptar logo holds strong character potential but has never been developed into a mascot. The majority of the committee responded more positively to a fun and relatable visual style compared to a rigid heroic representation. The gold and red color palette was identified as relevant to the identity of Gajah Mada, while there was a technical need for the mascot to be adaptive across various digital platforms including LED screens.

The affinity mapping results from the Define stage grouped findings into four clusters: Institutional Identity (connection to Akpol and police values), Historical Representation (how Gajah Mada is interpreted visually), Visual Style (aesthetic preferences of young audiences), and Technical Requirements (file format, resolution, and platform adaptation). From this synthesis, the following problem statement was formulated: Porsimaptar requires a 3D mascot capable of translating the Gajah Mada silhouette from the official event logo into a fun chibi character that is representative of the spirit of sports and arts, and is digitally adaptive for a young audience.

Historically, there is no statue that definitively depicts Gajah Mada; however, based on archaeological references from the Bima and Brajanata/Kertala statues, Gajah Mada is estimated to have had a large and sturdy build with distinctive attributes including an engraved

headband, snake-motif arm bracelets, and a Kala-headed belt (Setia Budi et al., 2023). The integration of local cultural references into character design has been shown to produce deeper meaning that strengthens relevance and a sense of audience ownership over the designed character (Negoro et al., 2023).



Figure 3. Alternative Mascot Concept Sketches

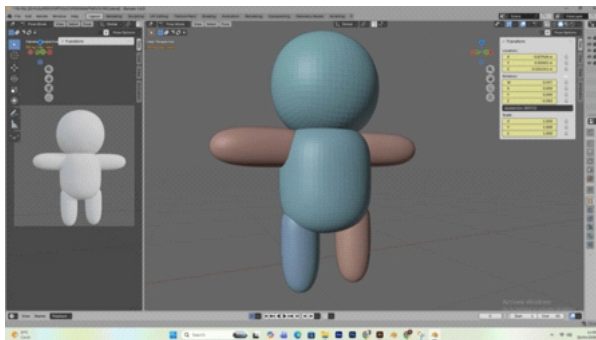


Figure 4. Box Modeling Process in Blender

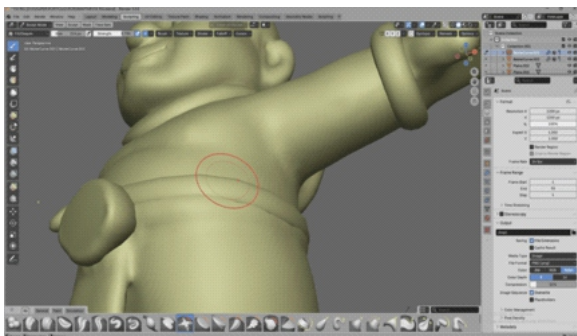


Figure 5. Sculpting Process in Blender



Figure 6. Texturing Process in Blender



Figure 7. Rigging Process in Blender



Figure 8. Final Render of the 3D Gajah Mada Mascot



Figure 9. Mascot Application on LED Screen at Porsimaptar Event

In the Ideate stage, exploration through brainstorming and mind mapping yielded two alternative concepts. The first alternative depicted Gajah Mada with a heroic pose and dominant heroic attributes. The second alternative depicted Gajah Mada in a fun and expressive chibi style with traditional attire and no sport-specific attributes, given that the event is multi-discipline. Based on evaluation against four design criteria, the second alternative was selected as the final concept because it was able to deliver a lighter and more approachable character while still visually representing the figure's identity.

The 3D model production process in the Prototype stage was carried out using Blender. The

production workflow began with the creation of a base mesh using box modeling to build the basic chibi body structure with large head and small body proportions.

Facial expression details and Gajah Mada's traditional attire were sculpted using Blender's Sculpt Mode.

UV unwrapping was performed per character part to ensure even and accurate texture distribution. The texturing process using brushes in Blender produced a rich surface appearance with a consistent gold and red color palette aligned with the Porsimaptar visual identity.

Basic rigging on the body and face was performed using Rigify to facilitate the posing and animation process. Final rendering was performed at high resolution with optimal lighting settings to produce a clean and professional visual.

Testing in the Test stage was conducted through four complementary evaluation approaches to minimize bias and strengthen the validity of the assessment

First, in-depth interviews with the three vendor informants as the parties connecting communication between the designer and the event committee. Azzam Albanna stated that the mascot successfully translated the essence of the Porsimaptar logo into a far more vivid and accessible form, and conveyed full satisfaction from the committee. Maynard Ryan assessed that the chibi Gajah Mada character has high visual appeal and is able to attract the attention of visitors of various ages, particularly younger audiences. Nur Syafiq confirmed that the mascot functions optimally on LED media thanks to the strong color contrast between gold and red, and the character proportions that are clearly legible on large-scale screens.

Second, the expert review was conducted by Wandah Wibawanto, a lecturer in Visual Arts at Universitas Negeri Semarang, as an independent evaluator not involved in the design process. Based on the assessment of character design principles, he stated that commercially the mascot has succeeded as an institutional event mascot as it was accepted by the client without any revision requests. Regarding the technical aspects of the 3D Gajah Mada mascot production, he assessed that the topology and UV wrapping still need to be improved, which can serve as a reference for

mascot development in future iterations.

An online questionnaire was administered to 10 independent audience members with 10 independent audience members who were present at the event on the day of implementation and had no involvement in the design or briefing process. The Google Form link was sent on 27 April 2026 via direct message to people who attended the event. The interview results showed that 6 out of 10 participants still clearly remembered the appearance of the Gajah Mada mascot, 7 out of 10 participants felt that the mascot visually represented the figure of Gajah Mada, and 8 out of 10 participants also felt that the Gajah Mada mascot appearance on the LED screen was clearly



Figure 10. Interview with Lecturer

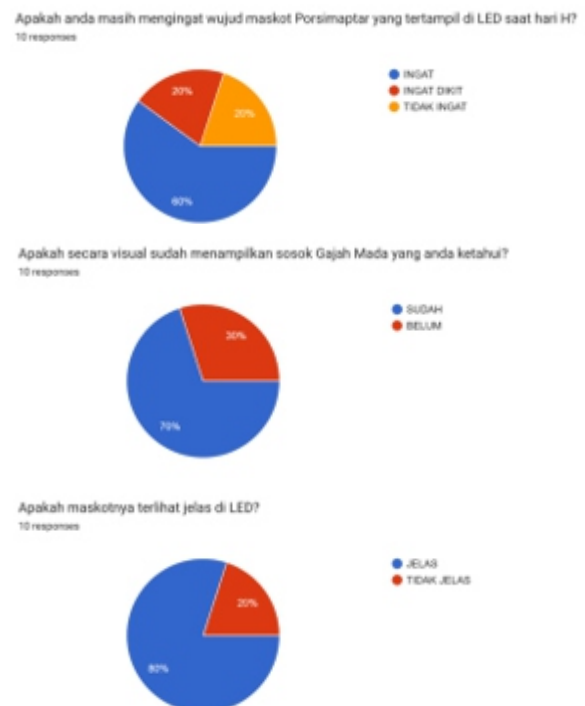


Figure 11. Survey Data from 10 Independent Audience



Figure 12. Documentation of 3D Mascot Implementation on LED

visible. These responses provide an external audience perspective that complements the evaluations obtained from vendors and the expert reviewer, particularly regarding mascot recognition and visual legibility during implementation.

Fourth, observation of the event opening documentation video showed a substantial proportion of the visible audience appeared to direct their attention toward the LED screen while the mascot animation was playing while the mascot animation was playing, as evidenced by the orientation of the audience silhouettes in the darkened room. The mascot was also displayed during a ceremonial segment with a bright red background, and the visual details of the character, including the chibi proportions, facial expressions, and the gold and red color palette, remained clearly legible under both different lighting conditions. This observation suggests that the mascot was visually noticeable during its large-scale implementation and that its main visual characteristics remained legible under the event display conditions.

Overall, the implementation evaluation indicates that the 3D mascot successfully fulfilled three primary design requirements identified during the Define stage: identity representation, audience accessibility, and technical adaptability. In terms of identity representation, the vendor evaluation and independent audience responses indicate that the character remained recognizable as a representation of Gajah Mada and maintained its connection with the Porsimaptar visual identity. In terms of audience accessibility, the chibi treatment contributed to a friendlier and more approachable character, while six out of ten independent participants were still able to recall

the mascot after the event. From a technical perspective, the mascot maintained adequate visual legibility when displayed on a large-scale LED screen, as indicated by eight out of ten audience responses and supported by implementation documentation. However, the expert review identified technical limitations in topology and UV wrapping, indicating that further refinement is required for more complex animation and future asset development. Therefore, the implementation results demonstrate that the design was functionally applicable as an event visual asset, while also identifying specific technical aspects for subsequent iteration.

Although the testing was conducted through four evaluation approaches, the sample of independent audience members interviewed is still limited to 10 people and therefore cannot represent the entire population of event participants statistically. In addition, limitations of the hardware used may affect the complexity of the model's details and rendering time.

CONCLUSION

The design of the 3D Gajah Mada mascot for the Porsimaptar event using the Design Thinking approach method has successfully produced a visual character that meets the needs and expectations of all stakeholders. The process from the Empathize to the Test stage resulted in a 3D chibi mascot that visually reflects the Porsimaptar identity through Gajah Mada's historical attributes, the gold and red color palette, and an expression that is fun and relatable for young audiences.

The use of Blender as the production platform has proven effective in producing high-quality 3D models that are adaptive across various media formats, including large-scale LED screens. The evaluation results through four approaches: vendor interviews, lecturer expert review, independent audience interviews, and visual documentation observation indicate positive acceptance from all parties regarding the aesthetics, functionality, and identity representation of the mascot, with improvement notes that can serve as a reference for development in future iterations.

This research contributes to the

development of 3D character-based event visual assets that integrate historical and cultural values into contemporary design relevant to Generation Z.

REFERENCES

- Abdurrohman, A., & Nurfitri, R. (2023). Perancangan desain maskot Kabupaten Situbondo dengan pendekatan Design Thinking. *MAVIS: Jurnal Desain Komunikasi Visual*, 5(1). <https://doi.org/10.32664/MAVIS.v5i01.757>
- Ahmad Salahudin, U. (2023). Redesain maskot untuk meningkatkan identitas visual Kabupaten Bojonegoro. *JoLLA: Journal of Language, Literature, and Arts*, 3(9), 1321–1338. <https://doi.org/10.17977/um064v3i92023p1321-1338>
- Alrazi, C. Z., & Rachman, A. (2021). Penerapan metode design thinking pada model perancangan animasi periklanan digital pencegahan COVID-19. *Ultimart: Jurnal Komunikasi Visual*, 14(2), 190–202. <https://doi.org/10.31937/ultimart.v14i2.2247>
- Armayuda, E., & Pragadeva, R. (2020). Metode desain dari brand menjadi maskot berdasarkan adaptasi metode Alina Wheeler ke dalam model 5M. *ANDHARUPA: Jurnal Desain Komunikasi Visual & Multimedia*, 6(02), 277–287. <https://doi.org/10.33633/andharupa.v6i02.3622>
- Brown, T. (2008). Design thinking. *Harvard Business Review*, 86(6), 84–92. <https://hbr.org/2008/06/design-thinking>
- Fahmi, S., Yudha Isnaini, L. M., & Anam, K. (2024). Dampak penyelenggaraan event olahraga terhadap tingkat kesejahteraan masyarakat. *Jurnal Porkes*, 7(1), 244–262. <https://doi.org/10.29408/porkes.v7i1.20944>
- Ferdianto, A. F., Al Hamidy, K. Q., Al Mahdi, P. Z., Nugroho, F., & Karami, A. F. (2024). Ekspedisi astronot: Menanamkan nilai Islam pantang menyerah dalam animasi 3D Blender. *Jurnal Rekayasa Sistem Informasi dan Teknologi*, 2(1), 421–434. <https://doi.org/10.59407/jrsit.v2i1.898>
- Hidayah, L. R., Rahmadiva, A. S., Shannen, S., & Pratista, T. A. (2022). Peran maskot untuk memperkuat identitas visual brand. *Jurnal VICIDI*, 12(1), 26–36. <https://doi.org/10.37715/vicidi.v12i1.2934>
- Laurencia, J. (2025). Denimalz mascot plush design: A study on cute character design principles. *Ultimart: Jurnal Komunikasi Visual*, 18(1), 67–9. <https://doi.org/10.31937/ultimart.v18i1.4152>
- Negoro, A. T., Suryani, R. I., & Nurhadi, N. (2023). Perancangan karakter personifikasi Mandau Uyau Man berbasis budaya Dayak Kalimantan Timur. *Jurnal Riset Rumpun Seni, Desain dan Media*, 2(1), 163–179. <https://doi.org/10.55606/jurrsendem.v2i1.1766>
- Rahardja, U., Yusup, M., & Aini, Q. (2015). Membangun media promosi dengan karakter animasi 3D. *ICIT Journal*, 1(1), 1–10. <https://doi.org/10.33050/icit.v1i1.7>
- Setia Budi, H., Adnyana, I. W., Swandi, I. W., & Suardina, I. N. (2023). Character design of Mahapatih Gajah Mada based on visual references from Bima and Brajanata/Kertala statues. *VCD: Journal of Visual Communication Design*, 8(1), 151–170. <https://doi.org/10.37715/vcd.v8i1.3956>
- Shaula, D. F., & Hasyim, N. (2017). Menanamkan konsep tata krama pada anak melalui perancangan game edukasi. *Jurnal Informatika UPGRIS*, 3(1). <https://doi.org/10.26877/jiu.v3i1.1609>
- Yoga, S. K. D., Swendra, C. G. R., & Sarjani, N. K. P. (2023). Perancangan desain maskot Festival Ubud Campuhan Budaya di Yayasan Janahita Mandala Ubud. *AMARASI: Jurnal Desain Komunikasi Visual*, 4(01), 115–122. <https://doi.org/10.59997/amarasi.v4i01.1952>
- Yuda, R., Sucipto, F. D., & Ghifari, M. (2022). Perancangan maskot ISBI Aceh sebagai upaya penguatan brand awareness. *Gorga: Jurnal Seni Rupa*, 11(1), 36–42. <https://doi.org/10.24114/gr.v11i1.29315>