Aithenticate.art
A.I. Scientific Authentication

Case ref. Number: 0212-03/2023
Case assigned by: Roi S.
Mode of receipt: Online request / website form
To, Mr. [HIDDEN]
Address: Not-disclosed

1   Description of the Documents:

The content of this report is made by **Aithenticate.art** based on the documents described below.

1. RGB Photos of resolution 2655×1902 showing the questioned ink drawing, from now on referred as **Q1**, provided by the customer. Refer to Figure 1 for the image of the painting **Q1**.

2. RGB png scans of the paintings labeled "*Admitted Authentic*", including 131 verified authentic drawings from Picasso.

3. RGB png scans of the paintings labeled "*Admitted Forgeries*", including 140 drawings made from forgers, followers of Picasso and also forgeries made by AI.

Figure 1: The subject of this study, an image of the painting, labeled as Q1.

Assignment

1. To prove that the area of inscription of the painting **Q1 is free of alterations**, by using digital inspection techniques.

2. To validate the resolution and pixel ranges on the **areas of inscription** of the painting Q1, *Admitted Authentic* and *Admitted Forgeries* as **identical** by our Artificial Intelligence (AI) and other digital comparison techniques.

3. To find out whether the A.I. model determine that the Questioned Drawing Q1 and the *Admitted Authentic* drawings have been made by the same person.

1.1 Declaration of Standards

For this work, we are working subject of one international standard:

- ANSI/ASB Standard 35: Standard for the Examination of Documents for Alterations to ensure that there is no alteration of the document by physical, chemical, electronic, or mechanical means, or a combination thereof.

2 A.I. Authentication results

We run our A.I. based mathematical models applied to the digitized images of the paintings. This model learns from images of verified authentic drawings and skilled forgeries made by humans and Generative A.I., and is tested on separate different samples regarded as control. The output of the model is a classification accuracy computed based on these control samples, and also the verdict for Q1. For this experiment we obtained a classification accuracy of 96% for the control set, the classification ROC curve and a heatmap. The heatmap and ROC are shown on Figure 2.

> ⚠ Our A.I. model correctly classified 96% of the control samples of drawings in the experiment run. The verdict of the Artificial Intelligence model for Q1:
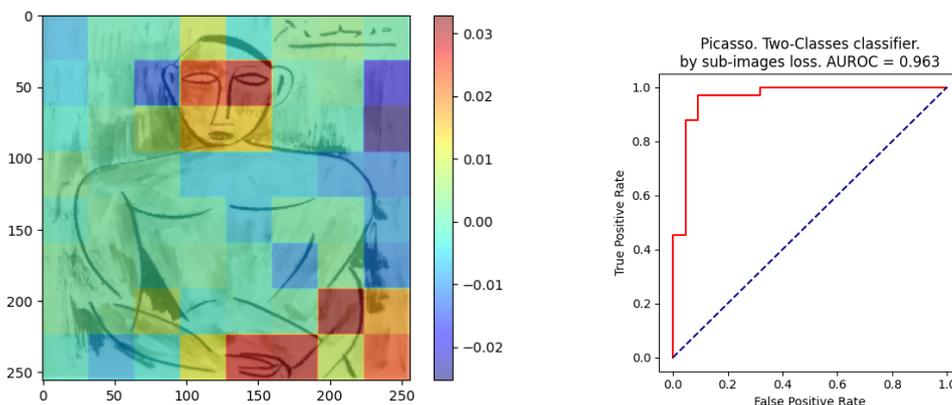> **The A.I. classifies Q1 as NON AUTHENTIC with a classification accuracy of 96%.**

Figure 2: On the left, the heatmap for **Q1**, showing in red the regions which contributed the most to classify **Q1** as **non-authentic** by the AI. On the right, the ROC curve.

> 💡 **Heatmap on the painting**: According to the A.I. model, the areas in **Q1** that are **more similar** with respect to the authentic drawings are distributed all over the painting, but more specially on the face, hips and legs of the figure at the bottom of the artwork.
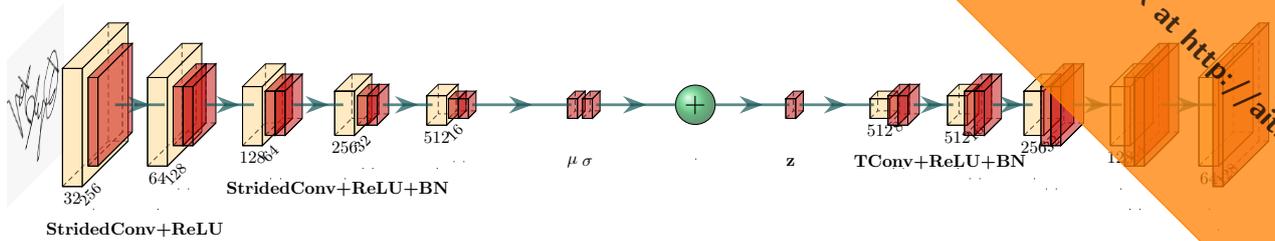
Figure 3: A diagram of the architecture for our A.I. model for Authentication of Drawings.

3   Description of the artwork

The painting subject of the present report, labeled as Q1, portrays a woman sitting on a chair, gazing towards the viewer, with her hair neatly combed to her left. She sits with her left leg crossed and her hands clasped just below the knee. The figure takes up a significant portion of the painting. The artwork bears the signature of the Spanish painter, "Picasso," underlined in the same black ink as the main drawing lines. The painting's color palette consists of two different shades of brown, one darker than the other, applied mainly using vertical strokes, which create an uplifting effect on the figure. The painting's overall aesthetic quality remains appealing and decorative, suitable for any space.

3.1   References to *Woman with Clasped Hands*, Picasso, 1907.

Figure 4 (a) shows "Mujer con las manos agarradas" or *Woman with Clasped Hands*, Picasso 1907. It is a study for Pablo Picasso's famous painting, "Les Demoiselles d'Avignon," completed in Spring 1907 in Paris. The study is an important milestone in the evolution of Picasso's artistic style towards greater simplification and harshness of lines. It marks the beginning of Picasso's experimentation with the Cubist style. Cubism is characterized by the fragmentation of form and the use of multiple viewpoints to depict an object or figure. This style emerged in Picasso's art after the Blue Period and represented a radical departure from traditional representational art. This original study was rapidly sketched by Picasso with thick black outlines on a natural ochre and neutral background, which allows the viewer to see the white canvas. The contours of the woman's face with clasped hands are reduced to the simplest expression, with almond profiles for the eyes, partial triangles for the nose, and round arches for the eyebrows. A similar pose of the figure was also reproduced on other works from 1906 (Figure 4 (b)), which gives an idea of how quickly Picasso's oeuvre transformed in just a few months.

The painting showcases Picasso's artistic mastery and his ability to convey complex emotions and ideas with simple lines and forms. The study's harsh lines and minimalism contrast with the intricate details and ornate style of earlier art movements such as Art Nouveau. This style, which became known as Cubism, was revolutionary and inspired many artists in the 20th century.

Today, "*Woman with Clasped Hands*" can be viewed at the National Picasso Museum in Paris, where it continues to inspire and captivate viewers with its bold and innovative approach to art.

By comparison of **Q1** with the mentioned study "*Woman with Clasped Hands*", the former one shows inconsistencies in the anatomy and composition. For instance, in the anatomy of forearms and hands, indicating that they appear as two separate concepts rather than a cohesive form. Also, on **Q1** both eyes are the same color. These inconsistencies do not diminish the beauty of **Q1** as an artwork, and we believe it can be an interesting piece to decorate any space. However, the mentioned differences, among others, makes difficult to classify **Q1** as an authentic Picasso painting.

3.2   References to other works from Picasso

Picasso was a prolific artist who created numerous works throughout his career, so there are many pieces that could be considered similar to **Q1** in terms of style or subject matter. Here are a few examples:

(a) *Mujer con las manos agarradas*, Picasso, Spring 1907. Image from the book "Picasso Ibero", 2021, Editorial: La Fábrica. ISBN: 978-84-17769-72-7.

(b) *"Study of a Seated Nude and Head of a Woman".* Picasso 1906.

(c) *"Seated nude. Study for Les Demoiselles d'Avignon"*, 1906. Picasso.

(d) *"Seated Woman (Marie-Thérèse)"*, 1937. Picasso.

Figure 4: Other works from Picasso with similar motifs and artistic elements.

"Seated Nude (Study for Les Demoiselles d'Avignon)" (1907), on Figure 4 (c) - This painting is a study for one of Picasso's most famous works, and features a similar seated pose to Q1. The lines are harsher and more angular than in Q1, but there is a similar focus on simplifying the form of the figure.

"Head of a Woman" (1909) - This painting features a close-up view of a woman's head, similar to the way **Q1** focuses on the woman's upper body. The colors are more muted and the lines are more abstract, but there is a similar sense of exploring the basic shapes and contours of the human form.

"Seated Woman (Marie-Thérèse)" (1937), on Figure 4 (d) - This painting features a similar subject

matter, with a woman seated in a chair. The colors are more vibrant and the lines are more fluid than in Q1, but there is a similar focus on the curves and angles of the figure.

"*Woman in a Red Armchair*" (1931) - This painting also features a woman seated in a chair, and the color palette is similar to that of Q1, with browns and oranges dominating. The lines are more abstract and stylized than in Q1, but there is a similar focus on the interplay between the figure and the chair.

3.3 Style description and authenticity tells

Picasso's style evolved throughout his career, and he experimented with a wide range of techniques and styles. As such, it is difficult to make a general statement about the predominant direction of his brushstrokes. However, it is worth noting that in many of his works, including "*Woman with the clasped hands*", Picasso made use of a variety of brushstrokes and textures to create different effects and convey different moods. On the other hand, when observing **Q1** we see a clearly predominant vertical direction for the brushstrokes, which at first sight does not align with the mentioned variety. It must be mentioned that the vertical lines give the figure an uplifting effect, adding on the the beauty of the figure.

The differences in the positioning and appearance of the arms and hands between the **Q1** and the original painting could indeed be further indications that the painting is a forgery. Inconsistencies in the composition and anatomy of a painting can be important clues that a painting is not an authentic work by the artist.

On the authentic painting "*Woman with the clasped hands*", both upper arms and both forearms are made with 8 intersecting curved strokes, and they make the impression of a continuous shape. On **Q1** the same number of curved strokes but it fails to convey the same sense of continuity. Indeed, on **Q1** the anatomy of the arm and forearm seems disjointed and appears as if they are two separate concepts. The left arm seems to have originated from the shoulder and ends under the knee, while the forearm on the same side appears to have originated from the left side of the torso and goes over the crossed leg to clasp with the right hand in front of the figure, and under the knee. This inconsistency in the anatomy of the arm is a significant deviation from the authentic painting, and the region is highlighted as one of the most relevant on the heatmap created based on the A.I. results. The area is highlighted in red, indicating that it was resourced by the A.I. for giving the verdict of **Q1** being non-authentic.

It is important to note that Picasso was known for experimenting with composition and anatomy in his paintings, especially during his Cubist period. However, the inconsistencies between the two versions of "Mujer con las manos agarradas" are significant enough to raise questions about the authenticity of Q1.

4 Conclusion

This report is about a painting labeled as Q1, which depicts a woman sitting on a chair with her hands clasped together. **Q1** is visually appealing and would make a great addition to any space as a decorative piece.

In Section 3 of this report, we utilized unique Artificial Intelligence models to analyze digital images of Q1. Our A.I. classified the painting as non-authentic with 96% accuracy when applied to a control dataset. In Section 4, we provide a detailed description of Q1, along with a comparison to some of Picasso's known authentic works that closely resemble it. This section includes a conceptual overview, artistic description, and historical context of the identified paintings from Picasso. Additionally, we discuss the authenticity indicators that align with the A.I.'s verdict.

Aithenticate.art
A.I. Scientific Authentication

5 Disclaimer / Legal note

The present report by Aithenticate.art is the result of the digital analysis and description of the images of the signatures submitted by the customer, using mathematical models. This analysis has been done with Diligence and Good Faith, but Aithenticate.art does not provide any warranty with the correctness of the sentences in this report with respect to the authenticity, or guarantees any error-free operation of Image Analysis Software, including the Artificial Intelligence (AI) model used. To the extent permitted by law, all warranty and liability of Aithenticate.art is hereby excluded, including, but not limited to, liability for financial damage in connection with the use of the present report document and the confidence in it, any decisions taken, purchases, sales, insurance, security, display or other dispositions relying upon the present report, damage or loss profits due to incorrect statements in the report. For further information, please refer to our Terms and Conditions.