Application and Research of Digital Painting "Blu' s Good Brush" Technology in the CG Field: A Postprint

Authors: Zhang Yifu

Date: 2023-10-08T00:00:00+00:00

Abstract

Digital painting represents a highly significant research subject within the contemporary field of computer graphics research, encompassing production and development across various related commercial domains. Among the expressive means of digital painting, brush technologies emerge incessantly, with "Blu' s Good Brush" technology constituting an important PS brush technology. This paper conducts an analysis and investigation of CG image applications for seven brush technologies within this framework: GenerAl, TrAditionAl, Mixer, Stylize, ShApe, FX, and Texture.

Full Text

Preamble

ChinaXiv Cooperative Journal

Title: Application and Research of Digital Painting "Blu' s Good Brush" Technology in the CG Field

(Minnan University of Science and Technology, Shishi, Fujian 362700)

Abstract: Digital painting represents a crucial research subject in contemporary computer graphics, encompassing production and development across various commercial domains. Among the myriad expressive brush techniques in digital painting, "Blu' s Good Brush" technology stands as a significant PS brush technique. This paper analyzes and investigates the application of seven brush technologies within this system—General, Traditional, Mixer, Stylize, Shape, FX, and Texture—in CG image creation.

Keywords: digital painting; computer graphics; Blu' s Good Brush; brush technology; CG images

CLC Number: TP39
Document Code: A
Article ID: 1671-0134(2021)06-133-03
DOI: 10.19483/j.cnki.11-4653/n.2021.06.042
Citation Format: Zhang Yifu. Application and Research of Digital Painting "Blu' s Good Brush" Technology in the CG Field [J]. China Media Technology, 2021(06): 133-134, 151.

Funding: This research was supported by the Fujian Province Young and Middle-aged Teacher Education Research Project (Grant No.: JAT190894)

The integration of emerging digital media art with multi-industry foundations serves as a powerful catalyst for contemporary artistic development and dissemination. CG digital painting, in particular, has emerged as a rapidly advancing force. However, its theoretical significance and practical development have not yet gained full recognition in educational and artistic circles. Digital painting and its foundational research have not been incorporated as important directions in university curricula and professional directories, and the art world lacks exhibitions and artistic activities dedicated to digital painting. As a vital form of digital media art communication, digital painting encompasses integration and foundational research in creative cultural products, film scenes, animation production, game development, and illustration design. In today' s society, where traffic-driven dissemination dominates, the images and iconic character designs in films, animations, commercial works, publications, and games hold significant aesthetic value and cognitive meaning for consumers, making digital painting and its foundational research increasingly important. This paper builds upon Mr. Yang Xueguo' s research on Blu' s Good Brush technology to explore its theoretical significance and application value [1].

The primary distinction between digital and traditional painting lies in their platforms and tools. Digital painting operates on computers and software with drawing tablets, unconstrained by traditional tools such as easels and frames. This virtual platform enables the creation of diverse forms and styles, though it lacks the authentic texture and material grain of traditional painting. However, modern printing technology can transform digital works into physical paintings, while digital formats facilitate rapid, efficient dissemination across networks, apps, and UI interfaces, enabling mass reproduction without aging or damage. These novel characteristics make digital painting particularly suited to the "digital age," leading to its rapid global proliferation and widespread adoption in commercial design, including product packaging, picture book illustrations, digital game design, fashion design, and architectural visualization.

Digital painting has increasingly permeated daily life through networks, books, film, and television. Various painting disciplines exhibit distinct visual languages and effects. For instance, traditional Chinese painting, employing brush, ink, paper, and inkstone, emphasizes fluid expression and vivid spirit, while oil

painting on linen with oil colors produces rich, substantial colors. These differences stem significantly from the tools employed. Digital painting' s greatest departure from easel painting lies in its tools: traditional brushes, pigments, paper, and frames disappear, replaced by a single computer. Consequently, digital painting is also termed "paperless creation."In the few decades since its inception, digital painting tools have evolved at a breathtaking pace, reaching considerable maturity and sophistication through powerful technological research and development [2][3].

Among countless digital painting methods and software applications, Photoshop stands as the pioneering software for digital painting and image processing. Within PS, Blu' s Good Brush technology represents one of the most important brush tools for digital painting. This brush system comprises seven major categories—General, Traditional, Mixer, Stylize, Shape, FX, and Texture —encompassing over 450 individual brushes. Each category addresses different styles and painting types in digital painting, designed to solve specific creative challenges and methods, applicable to game character design, animation production, conceptual scene design, and cultural creative product development.

Based on these seven categories in PS' s Blu' s Good Brush technology, this paper conducts a detailed theoretical analysis of each tool.

The General brush category serves as conventional, all-purpose brushes, with the "good" series being the most frequently used. These brushes excel at sketching line work, structural lines, and color textures, making them particularly suitable for initial drafts. They prove especially convenient and natural for line drawing and effectively render skin texture and grain in character design. The General category divides into the good series and skin series brushes [Figure 1: see original paper].

The Traditional brush category accommodates traditional painting styles, suitable for multiple genres, including watercolor, Chinese painting, oil painting, and pastel. Each brush features distinct settings and usage methods, requiring appropriate layer blending modes and tilt-sensitive pressure variations from drawing tablets. Optimal results necessitate tablets with tilt pressure sensitivity. Notably, the watercolor and Chinese painting brushes are particularly comprehensive, characterized by water-color fusion properties, thus requiring the Mixer Brush mode for painting [Figure 2: see original paper].

The Mixer brush category represents an advanced brush mode in PS' s Mixer Brush, capable of producing highly realistic pigment textures. Its primary advantage lies in eliminating the need for smudge tools, automatically generating wet-dry mixing effects with naturally blended colors. This brush satisfies users demanding high artistic quality in their work. Unlike General and Traditional brushes that mimic specific painting styles, the Mixer brush functions as a hybrid version applicable independently or combined with different painting styles to achieve diverse, rich color effects. Due to its requirement for integration with various artistic styles to produce appropriate results, no separate demonstration

is provided here.

The Stylize brush, as its name suggests, comprises stylized brushes designed to achieve strongly personalized and stylistically distinctive works. Characterized by flat textures and strong grain, these brushes suit artistic graphic design and poster creation. Their strokes incorporate design elements of points, lines, and planes, offering rich texture variations. Effective use of Stylize brushes requires understanding the concept of restraint and release, making them among the fastest and most efficient tools for graphic design drawing [Figure 3: see original paper].

The Shape brush category belongs to shape-based brushes for rendering elements within artworks. Their greatest convenience lies in quickly and easily drawing repetitive scene elements such as trees, rocks, grass clumps, branches, and hair details. They also facilitate rapid rendering of basic design shapes like circles, squares, and triangles. Suitable for graphic design, this brush category resembles Stylize brushes as a composite tool requiring combination with other brushes, though it can also function independently [Figure 4: see original paper].

The FX brush category comprises special effects tools for creating unique visual effects in artworks, essential for post-processing lighting and effects in game and animation scenes. These include lighting effects, explosions, magical auras, flowing gases, and dense clouds—indispensable elements for scene creation.

Note: Figure translations are in progress. See original paper for figures.