

CHI 2025 | Anime SIG

Anime R&D Case Studies

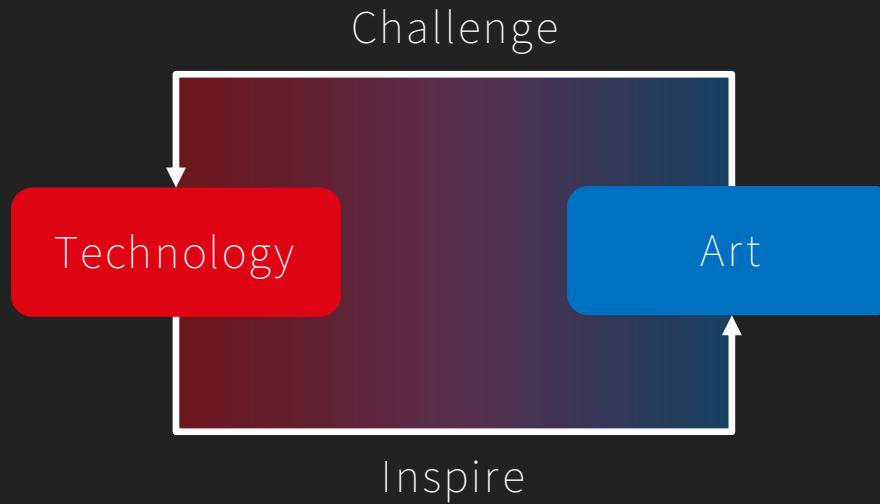
How Researchers Developed Tools for Anime Production

Yuki Koyama



***"The art challenges the technology,
and the technology inspires the art."***

—John Lasseter (Ex-Pixar CCO)

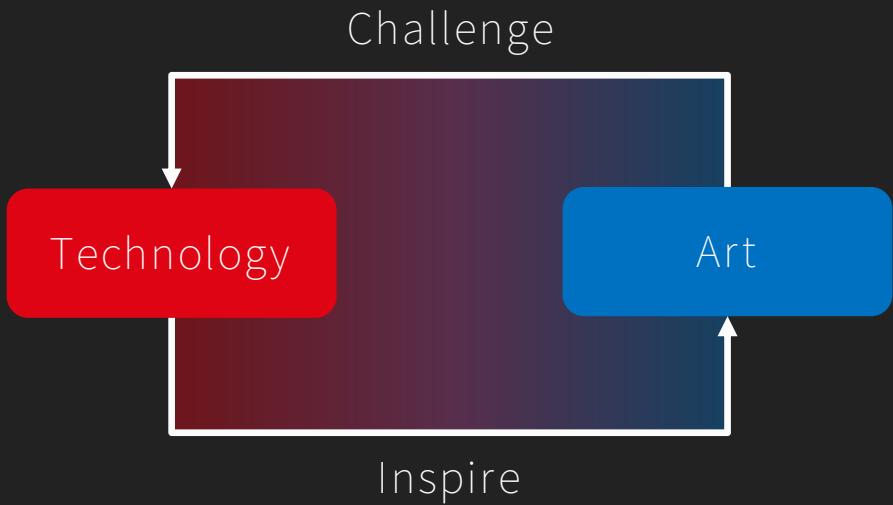


Where We Are Today

- This ideal relationship is not yet fully realized in anime production.
- We are beginning to create environments where technologists and artists can collaborate closely.

***"The art challenges the technology,
and the technology inspires the art."***

—John Lasseter (Ex-Pixar CCO)



Goals of Anime R&D

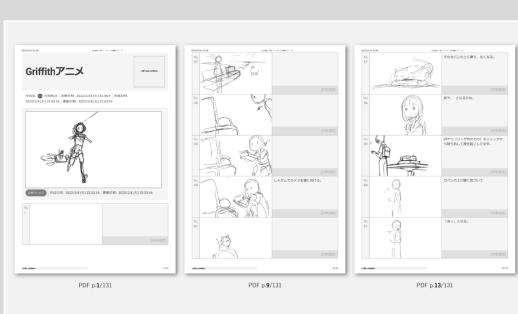
- Enhancing Production Efficiency
 - Reduce time and mental workload in the existing workflow
- Supporting Creativity
 - Create tools and environments that empower creativity
- Enabling New Anime Styles
 - Open up new possibilities beyond traditional anime expressions

Anime R&D Case Studies



Automatic
Colorization

OLM Digital, Inc.
[Computational Visual Media 2024]



Storyboarding
(E-Conte) Support

Arch Inc.
[CHI 2024]

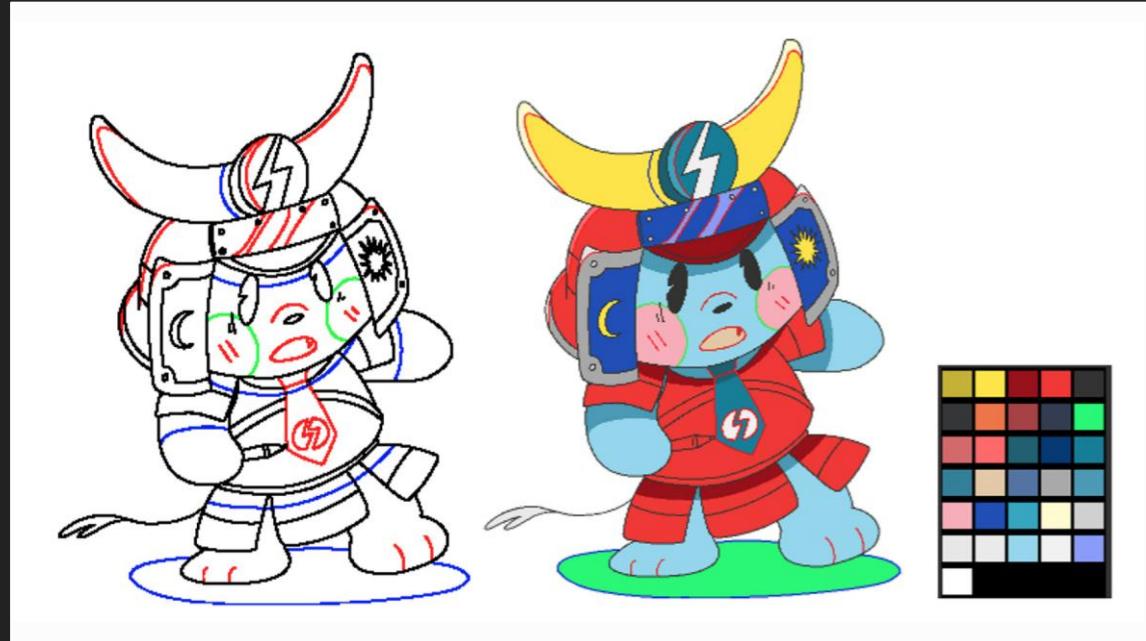


New Visual Style
Realization

Graphinica, Inc. / Arch Inc.
[SIGGRAPH Asia 2024 Tech. Comm.]

Automatic Colorization

OLM Digital, Inc. / NAIST /
Chiba Univ.

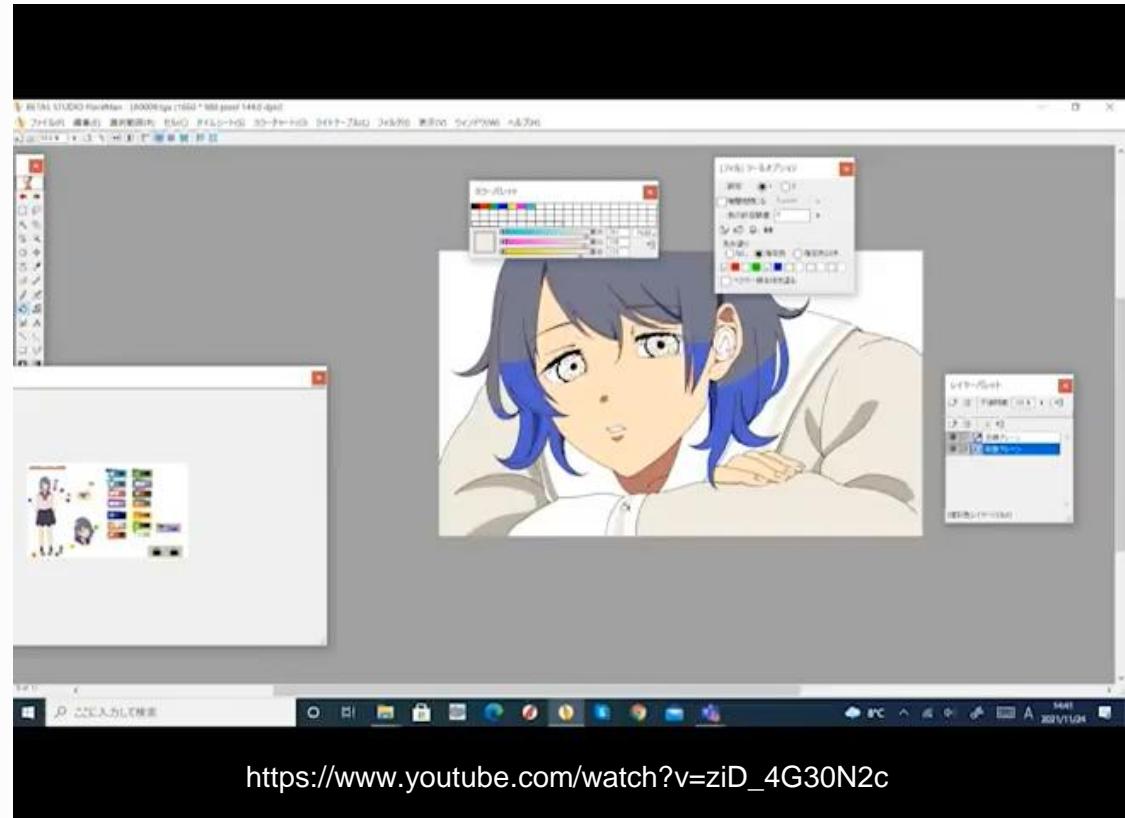


Maejima, A., Shinagawa, S., Kubo, H. et al. Continual few-shot patch-based learning for anime-style colorization. *Comp. Visual Media* 10, 705–723 (2024).
<https://doi.org/10.1007/s41095-024-0414-4>

Case 1: Automatic Colorization [Maejima+, CVM 2024]

Motivation:

Colorization is a time-consuming and non-creative part in the current anime production workflow

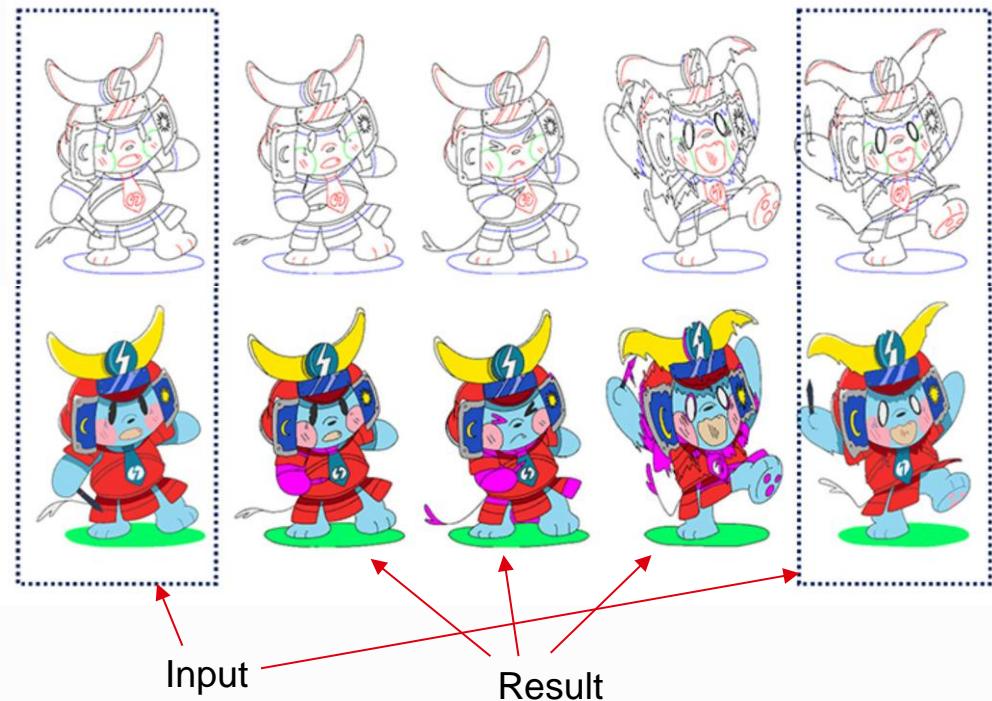


https://www.youtube.com/watch?v=ziD_4G30N2c

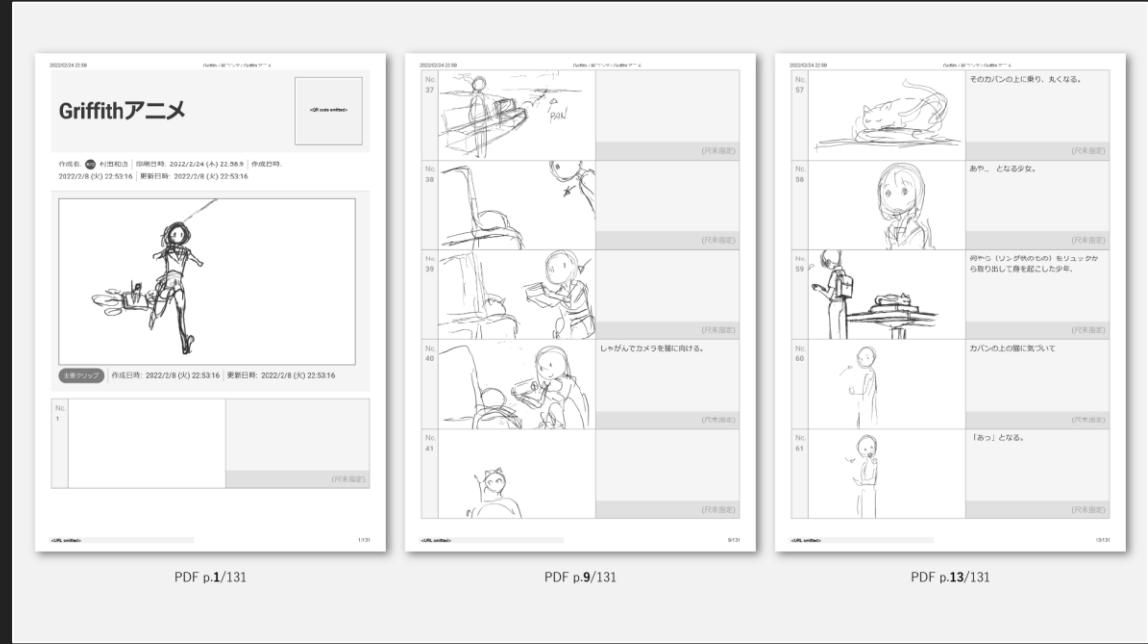
Case 1: Automatic Colorization [Maejima+, CVM 2024]

Their R&D:

- A (semi-)automatic colorization tool has been developed with anime-specific neural-network techniques
- This would save time and allow creators to focus on creative tasks



Storyboarding (E-Conte) Support Arch Inc. / AIST

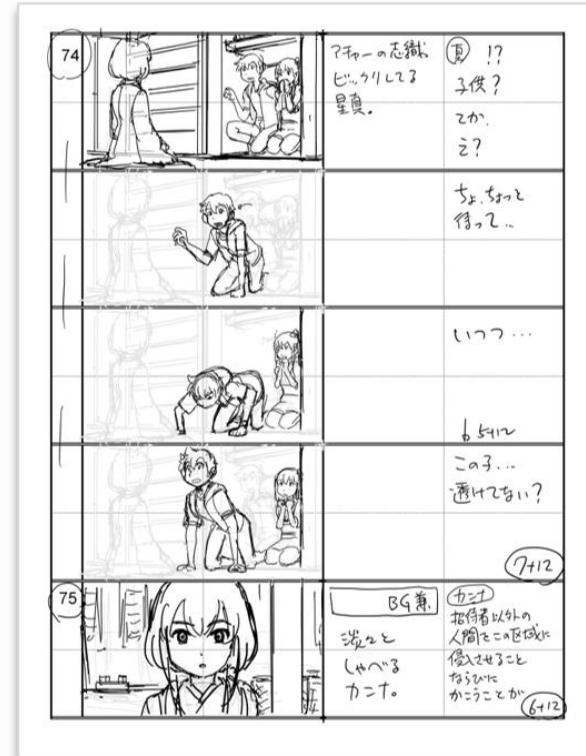


Jun Kato, Kenta Hara, and Nao Hirasawa. 2024. Griffith: A Storyboarding Tool Designed with Japanese Animation Professionals. In Proc. CHI '24.
<https://doi.org/10.1145/3613904.3642121>

Case 2: Storyboarding (E-Conte) Support [Kato+, CHI 2024]

Motivation:

- E-conté is a highly standardized format containing hand-drawn visual directions, scripts, and timing information
- Creativity support for e-conté is important as it is a “blueprint” but has been overlooked



[Image courtesy of MIXI, Inc.] An example of e-conté page, Starlight Promises

Case 2: Storyboarding (E-Conte) Support [Kato+, CHI 2024]

Their R&D:

- Carefully studied an existing authoring process and built a novel authoring tool
- Gained insights go beyond e-conté and apply to general storyboarding



New Visual Style Realization

Graphinica, Inc. / Arch Inc.
/ Takushoku Univ.



Hideki Todo, Yuki Koyama, Kunihiro Sakai, Akihiro Komiya, and Jun Kato. 2024. A Practical Style Transfer Pipeline for 3D Animation: Insights from Production R&D. In SIGGRAPH Asia 2024 Tech. Comm. <https://doi.org/10.1145/3681758.3698000>

Case 3: New Visual Style Realization

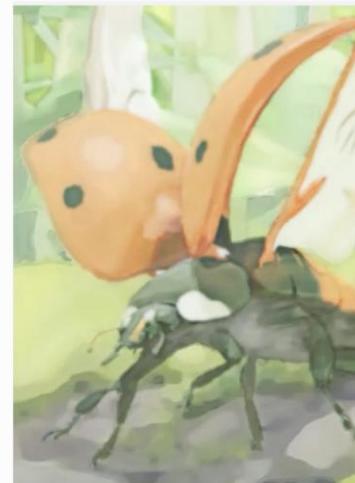
[Todo+, SIGGRAPH Asia 2024]

Motivation:

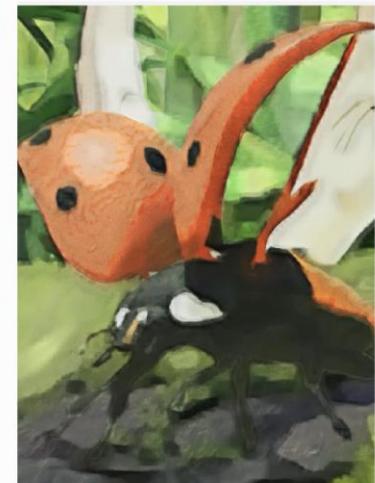
- Traditional anime has a unique flat look, but this style mainly came from production limitations, not just artistic choice

Their R&D:

- This project seeks to use style transfer technology to enable various styles beyond traditional anime



Watercolor
painting style



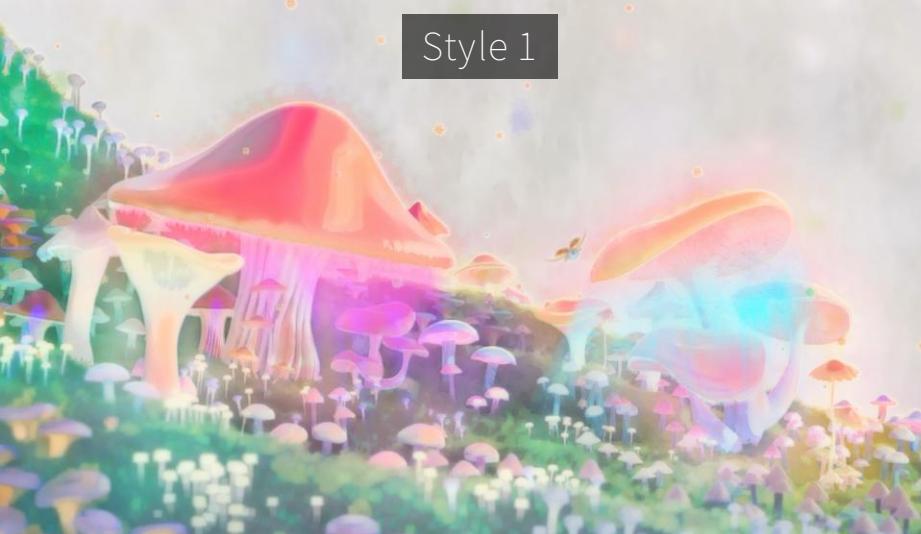
Oil painting style



An experimental short film: “Forest Tale”

- Uses various hand-drawn styles (including watercolor, oil painting, and pencil with pastel)

Style 1



Style 2



This pipeline facilitated rapid exploration of different styles, thereby enhancing artists' creativity!

Conclusion

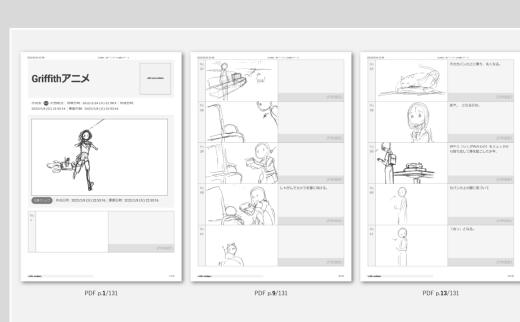
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[Computational Visual Media 2024]

Production Efficiency



Storyboarding
(E-Conte) Support

Arch
[CHI 2024]

Creativity Support



New Visual Style
Realization

Graphinica / Arch
[SIGGRAPH Asia 2024 Tech. Comm.]

New Anime Styles

Anime R&D Case Studies Exist, But Not Many

- However, such examples are still relatively few compared to the size of the industry
- Sharing industry practices with the academic community is crucial to accelerate progress