

Massive Collaborative Animation Projects

Changing Paradigms in Animation Education

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Figure 1: Production 3D Models by National Taiwan University of Arts team, Lighting and Rendering Test by Tun-Yi Chen and Final Character Design by Yi-chi Hsu

ABSTRACT

MCAP (The Massive Collaborative Animation Projects) is a unique intercollegiate, multi-year, global animation production currently entering its third year of production. Initiated during SIGGRAPH 2016 (Anaheim, CA), by Dr. William Joel (Western Connecticut State University), MCAP's purpose is to allow students and faculty from institutions around the world to join together in the creation of an original computer animation [Aoki et al. 2017]. An animation/visual effects production is a highly collaborative effort that utilizes multiple, interconnected teams [Alley et al. 2006], and industry needs workers that have experience with the intricacies of team-based projects. Many schools have animation components in their curricula, but may not have either the resources or student numbers to engage in the creation of extensive animation projects. By creating a platform for such schools to work together, sharing their resources and expertise, MCAP provides a mechanism to enrich these students' educational experiences. In this Talk, we will discuss the current development of the project and what we have learned during the first two years.

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CCS CONCEPTS

• Applied computing → Education;

KEYWORDS

3D Animation, Storytelling, Distance Collaboration

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1 RATIONALE

The production of 3D computer animated film/video requires large amounts of creative, technical, and material resources. Yet, 3D animation curricula often struggle to not only cover all of the topics needed for students to become good animators, but also facilitate hands-on production experience (See The Computer Graphics Knowledge Base Report [Alley et al. 2006], for more background). MCAP offers a model for intercollegiate collaboration and production that can add value to existing animation curricula, and present opportunities for shifting paradigms in animation pedagogy.

Collaborative, interdisciplinary, and interactive learning contributes to students' creativity [Hadrika and Sung 2009]. By working on a large production project, students can learn firsthand how a production pipeline works, coordinating work and building creative networks within an intercollegiate, international framework.

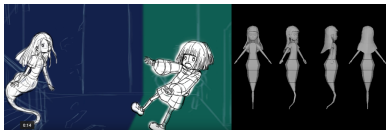


Figure 2: (a) 2D Animatic image by Aaron Hwang, Yale University. (b) 3D previz character model by Jillian Mack, Fullerton College

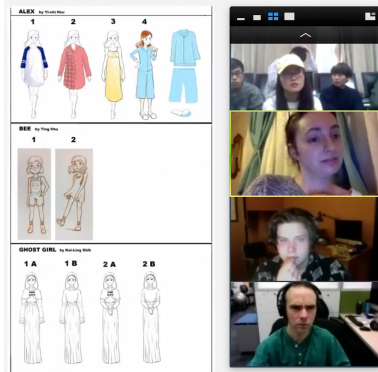


Figure 3: Student discussion on character design in ZOOM video call

Though schools with full animation and VFX programs can easily conduct such large-scale productions, often employing multiple full-time instructors with various production experience to facilitate this process, smaller programs have smaller student cohorts, as well as a limited number of instructors [Palana and Rittler 2008]. MCAP was started in 2016 to fill this gap and give students the opportunity to work collaboratively beyond their respective institutions.

2 CURRENT DEVELOPMENT

MCAP is now in its third year, and we are experimenting with a model consisting of two, parallel projects. MCAP 1, started in 2016, is directed by Dr. William Joel, and is a traditional 3D CG character animation production. Initial story development took place fall 2016 thru spring 2017, with animatic and art direction work in summer 2017. The project completed the 3D previz and character design, and working on final production models. Various schools, including University of Northern Colorado, Yale University, University of Alaska Fairbanks, National Taiwan University of Arts (Taiwan) and Woosong University (South Korea) are involved.

MCAP 2, directed by Professor Jacob Pollak (Ferris State University), was announced in summer 2017 and began in fall 2017. This project focuses on the production of a short, real-time animation, for 360-degree dome projection. The production includes students with experience in production management, art development, research and development, etc. Based on lessons learned from MCAP 1, it is hoped to create a sustainable model for intercollegiate production and timely execution of work across schools.

3 COMMUNICATION AND DISCUSSIONS

Group work across multiple time zones presents challenges. Experimentation with various collaboration and task management tools during MCAP 1 has yielded a suite of appropriate online tools. Slack messaging and Zoom video meetings present a valuable learning experience for students to collaborate outside of their schools and cultures, cultivating leadership and creativity.

4 CURRENT ISSUES

Large collaborative efforts, such as MCAP present many challenges. The MCAP organization consists of a Steering Committee and student unit leadership to guide production, document progress, and address challenges as they arise.

A key goal of MCAP strives to identify and document challenges and solutions as they arise. Challenges encountered during the first MCAP production include: scheduling student production across international time zones and institutional structures; encouragement of sustainable student engagement and participation; establishing models for regular critique, feedback, and creative direction; and lastly, establishing successful models for recruitment and institutional engagement. Documented successes have occurred thru a cloud-based approach, allowing students to connect thru both real-time and asynchronous communication tools, and network file sharing tools that allow students to contribute collectively to a production that crosses geographical and institutional borders. The MCAP Steering Committee continues to document, collate, and disseminate best practices that will benefit any collective animation effort in higher education.

5 FUTURE DEVELOPMENT

As of May 2018, MCAP 1 is moving onto the final production, including final character animation. MCAP 2 is also aiming to complete a short demo in 2018. In addition, student managers and leaders are preparing to enter the ACM Student Research Competitions.

Once MCAP 1 has wrapped, the Steering Committee, with the help of student leaders and interested faculty will create a series of white papers documenting the process MCAP has developed to date. This will include the creation of white paper specifying learning objectives for each team in the production pipeline. Those materials are aimed to help other interested faculty to teach animation, and to show the students and companies how working with worldwide-located talents might enhance the production process.

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