# SIGGRAPH *Groovy Graphics* Word Format

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## ABSTRACT

This SIGGRAPH[1] Groovy Graphics Assignment conforms to the formatting guidelines for ACM SIG Proceedings. It is meant to highlight section headings and required content.

## CCS CONCEPTS

• **Computer methodologies** → Animation; Rendering; Image manipulation; Graphics systems and interfaces; Image compression; Shape modeling;

## KEYWORDS

CGEMS, Groovy Graphics, Word

**ACM Reference format:**

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## 1 OVERVIEW

This document provides a template for the ACM SIGGRAPH Groovy Graphics Assignments Word format, based on the `ACM_SigConf.docx` Word example provided by the ACM. Currently, for SIGGRAPH submission, authors should use the ACM SIGGRAPH format, not the TOG format.

The objective is to collect Groovy Graphics Assignments (GGAs) related to computer graphics education. The content specification amalgamates several sources, starting with the original CGEMS stipulations made by Figueiredo et al. [2003, 2004], with updated revised submission requirements (e.g., format of the SIGGRAPH GGA) as well as the assignment's contribution to the Computer Graphics (CG) curriculum.

Acting as a template for a GGA submission, we request that authors identify where in the computer graphics curriculum taxonomy the GGA belongs. We require three criteria:

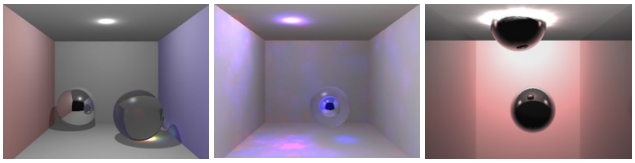

**Figure 1: Example photon mapping student images from Clemson's Fall 2011 and Spring 2012 course on Data Structures and Algorithms. From left to right: Jason Anderson, Daniel Willard, and Shi Zheng.**

(1) the selection of appropriate topic heading,
(2) the assignment's curricular level (e.g., graduate, etc.),
(3) explanation of the curricular level nomenclature, i.e., do not assume that readers are familiar with your country's educational system and please explain what is meant by the given specification (e.g., the GGA is part of a 16-week course taught to students in their first year of a 4-year program).

For the submission format, we start with the nifty assignment format adopted by SIGCSE, ACM's Special Interest Group on Computer Science Education. We then consider the ACM's Computing Classification System (CCS) and the ACM/IEEE-CS Joint Task Force on Computing Curricula [2013] as useful taxonomies for helping specify the GGA metadata.

SIGGRAPH Groovy Graphics submissions should follow nifty assignment examples accepted by SIGCSE, available at **http://nifty.stanford.edu**, but be related to computer graphics.

The GGA article is a short (2 page) contribution that roughly follows the structure of this template, including the given section headings: **Overview, Metadata, Materials**. The Overview should provide information related to what the assignment is about, and what is asked of the student. The Overview could also state why the authors think the assignment is groovy.

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**Table 1:** *Metadata in tabular format*

| | |
|---|---|
| Summary | What is the GGA about, what do students learn? |
| Learning Outcomes | What should students who complete this assignment be able to explain, describe, implement, etc. (using active verbs from Bloom's taxonomy)? |
| Classification(s) | What is the curricular topic addressed by this assignment (e.g., Animation, Fundamentals, Modeling, etc.; there could be overlap among several—see Classification)? |
| Audience | What is the assignment's curricular level (e.g., CS1, CS2, junior, senior, etc.)? |
| Dependencies | What is students' required prior knowledge, what else must be in place for students to carry out the assignment? |
| Prerequisites | Does this assignment build on any other assignments, e.g., is it a module in a sequence? |
| Strengths | What do (you think) students like about this assignment? |
| Weaknesses | What do (you think) students dislike about this assignment? |
| Variants | Are there any variants students can explore? |
| Assessment | What are the assessment criteria? |

## 2 METADATA

Metadata consists of tabular data given in Table 1. Pay special attention to the Classification, which is based on topics from both the ACM Computing Classification System (CCS) and the ACM CS 2013 Curriculum: Graphics & Visualization (GV). Categories are:

(1) Animation
(2) Computational Geom. (Alg. And Complexity)
(3) Fundamentals
(4) Graphics & Interfaces
    (a) GPUs
    (b) Input Devices
    (c) Mixed/Aug. Reality
    (d) Perception
    (e) File Format
    (f) Virtual Reality
(5) Image Compression
(6) Image Manipulation
(7) Modeling
(8) Rendering
(9) Shape Modeling

Specify also who is the groovy graphics assignment intended for as student backgrounds will differ, e.g., they may be programmers, artists, interdisciplinary students, etc.

## 3 MATERIALS

Materials should list what comprises this groovy graphics assignment, e.g., the specification (e.g., instructions to students), assumed pre-requisites, required files, example inputs, etc. Specifications for programming assignments should attempt to remain platform- and language-agnostic, e.g., use pseudocode.

## ACKNOWLEDGMENTS

The authors would like to thank the SIGGRAPH and EuroGraphics Education Committees.

## A ACM COMPUTING CLASSIFICATION SYSTEM (CCS)

The ACM Computing Classification System list the following Computer Graphics subtopics:

(1) Animation
(2) Graphics Systems and Interfaces
    (a) Graphics Processors (GPUs)
    (b) Graphics Input Devices
    (c) Mixed / Augmented Reality
    (d) Perception
    (e) Graphics File Format
    (f) Virtual Reality
(3) Image Compression
(4) Image Manipulation
(5) Rendering
(6) Shape Modeling

## B ACM CS 2013 CURRICULUM: GRAPHICS & VISUALIZATION (GV)

The ACM CS 2013 Curriculum lists the following GV subtopics:

(1) Animation
(2) Computational Geom. (Algorithms and Complexity)
(3) Fundamentals
(4) Machine Vision and Image Processing (Intel. Systems)
(5) Modeling
(6) Rendering
(7) Virtual Reality (HCI)
(8) Visualization

See the ACM/IEEE-CS Joint Task Force on Computing Curricula [2013] for specific topics and learning outcomes.

## REFERENCES

ACM/IEEE-CS Joint Task Force on Computing Curricula. 2013. *Computer Science Curricula 2013.* Technical Report. ACM Press and IEEE Computer Society Press, New York, NY. https://doi.org/10.1145/

Frederico C. Figueiredo, Dena E. Eber, and Joaquim A. Jorge. 2003. CGEMS: Computer Graphics Educational Materials Server. In *ACM SIGGRAPH 2003 Educators Program (SIGGRAPH '03).* ACM, New York, NY, 1–7. https://doi.org/10.1145/965106.965131

Frederico C. Figueiredo, Dena E. Eber, and Joaquim A. Jorge. 2004. Computer Graphics Educational Materials Source Policies and Status Report. In *ACM SIGGRAPH 2004 Educators Program (SIGGRAPH'04).* ACM, New York, NY. https://doi.org/10.1145/1186107.1186119