JCGT Style Guidelines and Formatting Template

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Figure 1. A teapot teaser figure. A teaser figure is **mandatory** for JCGT.

Abstract

This document is the *JCGT* formatting template *and* a description of the guidelines for *JCGT* articles. The author names on this document are fictional and chosen to show how to format affiliations.

1. Introduction

Documents may be typeset using any system so long as they follow the formatting of this example, however we recommend the use of LaTeX because it simplifies typesetting.

1.1. Related Work

Unless the point of the article is to provide a survey, do not survey all related work in a *JCGT* article. Instead, discuss only directly relevant work against which the technique will be compared or alternatives that the reader might prefer. There need not be an explicit related work section, however the introduction should provide enough information for the reader to know why he or she might prefer this technique to a previous one that is known to the community.

2.   Sections

Divide the article into logical sections...

2.1.   Sub-section

...and subsections.

2.1.1.   Sub-subsections

Use sub-subsections sparingly.

Paragraph.   Consider "paragraph" formatting as an alternative to sub-subsections.

3.   Abstract

Briefly describe the topic, value of the technique, and major limitations in the abstract. Abstracts will appear in contexts where the paper (and bibliography) are not available, so avoid direct citations in the abstract text. For example,

"The CIE Lab color space is useful for image editing operations and device-independent representation of color. However, most modern display input and cameras output is in the sRGB color space, as are stored images on disk. We describe a method for efficiently converting colors between the Lab and sRGB color spaces that requires no branches, lookup tables, or floating-point operations.

Our 32-bit fixed-point implementation is 30% faster than the traditional (and floating point) method on iPad 3 and Core i7 processors and produces provably minimal error for 24-bit input color. However, unlike traditional color space conversions, it does not generalize for conversions to and from CIE XYZ or gamma 1.0 RGB space in the new method, and it is slower than direct floating-point conversion on devices that do not support native integer instructions (e.g., DX9 GPUs).

The article includes C and GLSL source code adapted from the hardware accelerated path of the Colortech's commercial PaintMaster application for both desktop and mobile platforms. "

4.   Images

Capture raster images at high resolution in a lossless format, such as PNG. Vector images can be directly incorporated in formats such as PDF; avoid rasterizing vector source diagrams and results. Include figures with captions as shown in Figure 2.

Figures should be near the text that refers to them whenever possible, and should not be reduced to grayscale. Encode images in the sRGB space (the default for PNG).

Figure 2. This is a teapot rendered by OpenGL with environment mapping and a Blinn-Phong BSDF.

```c
#include <stdio.h>

/* Entry point for the program */
int main(const int argc, const char* argv[]) {

    /* Print some output */
    printf("Hello world!\n");

    return 0;
}
```

Listing 1. A simple C program.

5. Source Code

Format source code listings with syntax highlighting as shown in Listing 1. Inline code, such as `lerp(a, b, t)`, should also be in a fixed-width font.

6. Hyperlinks

Link section, figure, table, equation, etc. reference numbers and citations to their target (the JCGT LaTeX class automatically generates these links).

Favor standard citations over URLs whenever possible, since URLs may not stand the test of time. When providing a URL, type the full URL text so that it is still useful in print, and create a hyperlink. For example, the *JCGT* website is at http://jcgt.org.

7. Citations and Bibliography

Do not use citations as nouns–the text should read correctly were they omitted. JCGT LaTeX class, where `\cite` or `\citep` can be used for parenthetical references (in [], and not considered part of the text), and `\citet` can be used for references where the author(s) name will appear as part of the sentence, and the year in [] after. Author

names in text references should use the last name only, as [Author year] for single author, [Author1 and Author2 year] for two author, or [Author1 et al. year] for three or more authors, For example, the following are correct:

1. "The Rendering Equation [Immel et al. 1986; Kajiya 1986] relates the incoming and outgoing light at a surface..."

2. "The paper by Immel et al. [1986] uses a directional parameterization..."

3. "Strunk and White [1979] is a classic English language style guide."

The bibliography should be sorted by first author's last name, with names as last name and first initial(s) in small caps. All entries in the bibliography **must** have URLs unless no URL is possible (e.g., book, very old thesis).

8. Units

Use SI units, e.g., meters, seconds, unless there is an application-specific reason to employ a non SI-unit such as 'feet'. Units should appear in normal Roman type when in an equation, e.g.,

$$\frac{150 \text{ m}}{20 \text{ s}} = 75 \text{ m/s} \tag{1}$$

to distinguish them from variable names.

Time performance should be measured in **time** units, e.g., "the shader took 3.6 s to execute on GeForce GTX 680." However, it is appropriate to also express values in frames per second when discussing the end-to-end performance of a complete system. For example, the performance of a shadow algorithm implementation should be measured in milliseconds but the performance of a complete virtual reality system could be measured in frames per second instead of rendering time per frame.

9. Mathematics

Please use the guidelines in Table 1 for typesetting mathematics, although in some cases, domain-specific notation should overrule them.
Equation 2 is an example of a numbered equation following these conventions.

$$L_o(X, \hat{\omega}_o) = L_e(X, \hat{\omega}_o) + \int_{\mathbf{S}^2} L_i(X, \hat{\omega}_i) \cdot f(\hat{\omega}_i, \hat{\omega}_o) \cdot |\hat{n} \cdot \hat{\omega}_i| \, d\hat{\omega}_i \tag{2}$$

Large equations, images, and tables may exceed the regular text margins but should stop within 1.5 cm of the physical page border.

Acknowledgements

Scalar	x
Mathematical vector	$\vec{v}$
Unit vector	$\hat{\omega}$
Matrix	$\mathbf{M}$
Transpose	$\mathbf{M}^\top$
Inverse	$\mathbf{M}^{-1}$
Geometric point	X
Set	$\mathbb{S}$
Subscript expression	h_i
Subscript name	L_{in}
Function	$f(x)$
Named function	$\max(3,4), \text{lerp}(a,b,t)$

Table 1. Math symbol formatting guidelines.

References

IMMEL, D. S., COHEN, M. F., AND GREENBERG, D. P. A radiosity method for non-diffuse environments. *SIGGRAPH Comput. Graph.*, 20(4):133–142, August 1986. ISSN 0097-8930. URL: https://doi.acm.org/10.1145/15886.15901. 4

KAJIYA, J. T. The rendering equation. In *Proceedings of the 13th annual conference on Computer graphics and interactive techniques*, SIGGRAPH '86, pages 143–150, New York, NY, USA, 1986. ACM SIGGRAPH, ACM. ISBN 0-89791-196-2. URL: https://doi.acm.org/10.1145/15922.15902. 4

STRUNK, JR., W. AND WHITE, E. B. *The Elements of Style*. Macmillan, third edition, 1979. 4

Index of Supplemental Materials

When supplemental materials such as video, data sets, and source code are provided with an article, briefly describe them by directory or filename here.

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