

# Directional Pseudo-color Enhancement of Image Gradients

Anonymous ECCV submission

Paper ID \*\*\*

**Abstract.** The abstract should summarize the contents of the paper. LNCS guidelines indicate it should be at least 70 and at most 150 words. It should be set in 9-point font size and should be inset 1.0 cm from the right and left margins. ...

**Keywords:** image filtering, edge detection, pseudo-coloring

## 1 Introduction

This document serves as an example submission. It illustrates the format we expect authors to follow when submitting a paper to ECCV. At the same time, it gives details on various aspects of paper submission, including preservation of anonymity and how to deal with dual submissions, so we advise authors to read this document carefully.

## 2 Paper formatting

### 2.1 Language

All manuscripts must be in English.

### 2.2 Paper length

Papers submitted for review should be complete. The length should match that intended for final publication. Papers accepted for the conference will be allocated 14 pages (plus references) in the proceedings. Note that the allocated 14 pages do not include the references. The reason for this policy is that we do not want authors to omit references for sake of space limitations.

Papers with more than 14 pages (excluding references) will be rejected without review. This includes papers where the margins and formatting are deemed to have been significantly altered from those laid down by this style guide. The reason such papers will not be reviewed is that there is no provision for supervised revisions of manuscripts. The reviewing process cannot determine the suitability of the paper for presentation in 14 pages if it is reviewed in 16.

2.3 Paper ID

It is imperative that the paper ID is mentioned on each page of the manuscript. The paper ID is a number automatically assigned to your submission when registering your paper submission on CMT.

2.4 Line numbering

All lines should be numbered, as in this example document. This makes reviewing more efficient, because reviewers can refer to a line on a page. If you are preparing a document using a non-L<sup>A</sup>T<sub>E</sub>X document preparation system, please arrange for an equivalent line numbering.

2.5 Mathematics

Please number all of your sections and displayed equations. Again, this makes reviewing more efficient, because reviewers can refer to a line on a page. Also, it is important for readers to be able to refer to any particular equation. Just because you didn't refer to it in the text doesn't mean some future reader might not need to refer to it. It is cumbersome to have to use circumlocutions like "the equation second from the top of page 3 column 1". (Note that the line numbering will not be present in the final copy, so is not an alternative to equation numbers). Some authors might benefit from reading Mermin's description of how to write mathematics: [www.pamitc.org/documents/mermin.pdf](http://www.pamitc.org/documents/mermin.pdf).

3 Blind review

Many authors misunderstand the concept of anonymizing for blind review. Blind review does not mean that one must remove citations to one's own work. In fact it is often impossible to review a paper unless the previous citations are known and available.

Blind review means that you do not use the words "my" or "our" when citing previous work. That is all. (But see below for technical reports).

Saying "this builds on the work of Lucy Smith [1]" does not say that you are Lucy Smith, it says that you are building on her work. If you are Smith and Jones, do not say "as we show in [7]", say "as Smith and Jones show in [7]" and at the end of the paper, include reference 7 as you would any other cited work.

An example of a bad paper:

An analysis of the frobnicatable foo filter.

In this paper we present a performance analysis of our previous paper [1], and show it to be inferior to all previously known methods. Why the previous paper was accepted without this analysis is beyond me.

[1] Removed for blind review

An example of an excellent paper:

An analysis of the frobnicatable foo filter.

In this paper we present a performance analysis of the paper of Smith [1], and show it to be inferior to all previously known methods. Why the previous paper was accepted without this analysis is beyond me. [1] Smith, L. and Jones, C. “The frobnicatable foo filter, a fundamental contribution to human knowledge”. Nature 381(12), 1-213.

If you are making a submission to another conference at the same time, which covers similar or overlapping material, you may need to refer to that submission in order to explain the differences, just as you would if you had previously published related work. In such cases, include the anonymized parallel submission [1] as additional material and cite it as

1. Authors. “The frobnicatable foo filter”, BMVC 2014 Submission ID 324, Supplied as additional material `bmvc14.pdf`.

Finally, you may feel you need to tell the reader that more details can be found elsewhere, and refer them to a technical report. For conference submissions, the paper must stand on its own, and not *require* the reviewer to go to a techreport for further details. Thus, you may say in the body of the paper “further details may be found in [2]”. Then submit the techreport as additional material. Again, you may not assume the reviewers will read this material.

Sometimes your paper is about a problem which you tested using a tool which is widely known to be restricted to a single institution. For example, let’s say it’s 1969, you have solved a key problem on the Apollo lander, and you believe that the ECCV audience would like to hear about your solution. The work is a development of your celebrated 1968 paper entitled “Zero-g frobnication: How being the only people in the world with access to the Apollo lander source code makes us a wow at parties”, by Zeus.

You can handle this paper like any other. Don’t write “We show how to improve our previous work [Anonymous, 1968]. This time we tested the algorithm on a lunar lander [name of lander removed for blind review]”. That would be silly, and would immediately identify the authors. Instead write the following:

We describe a system for zero-g frobnication. This system is new because it handles the following cases: A, B. Previous systems [Zeus et al. 1968] didn’t handle case B properly. Ours handles it by including a foo term in the bar integral.

...

The proposed system was integrated with the Apollo lunar lander, and went all the way to the moon, don’t you know. It displayed the following behaviours which show how well we solved cases A and B: ...

As you can see, the above text follows standard scientific convention, reads better than the first version, and does not explicitly name you as the authors. A reviewer might think it likely that the new paper was written by Zeus, but cannot make any decision based on that guess. He or she would have to be sure that

no other authors could have been contracted to solve problem B.

For sake of anonymity, it's recommended to omit acknowledgements in your review copy. They can be added later when you prepare the final copy.

## 4 Manuscript Preparation

This is an edited version of Springer LNCS instructions adapted for ECCV 2018 first paper submission. You are strongly encouraged to use  $\text{\LaTeX}_\epsilon$  for the preparation of your camera-ready manuscript together with the corresponding Springer class file `llncs.cls`.

We would like to stress that the class/style files and the template should not be manipulated and that the guidelines regarding font sizes and format should be adhered to. This is to ensure that the end product is as homogeneous as possible.

### 4.1 Printing Area

The printing area is 122 mm  $\times$  193 mm. The text should be justified to occupy the full line width, so that the right margin is not ragged, with words hyphenated as appropriate. Please fill pages so that the length of the text is no less than 180 mm.

### 4.2 Layout, Typeface, Font Sizes, and Numbering

Use 10-point type for the name(s) of the author(s) and 9-point type for the address(es) and the abstract. For the main text, please use 10-point type and single-line spacing. We recommend using Computer Modern Roman (CM) fonts, Times, or one of the similar typefaces widely used in photo-typesetting. (In these typefaces the letters have serifs, i.e., short endstrokes at the head and the foot of letters.) Italic type may be used to emphasize words in running text. Bold type and underlining should be avoided. With these sizes, the interline distance should be set so that some 45 lines occur on a full-text page.

**Headings.** Headings should be capitalized (i.e., nouns, verbs, and all other words except articles, prepositions, and conjunctions should be set with an initial capital) and should, with the exception of the title, be aligned to the left. Words joined by a hyphen are subject to a special rule. If the first word can stand alone, the second word should be capitalized. The font sizes are given in Table 1.

Here are some examples of headings: “Criteria to Disprove Context-Freeness of Collage Languages”, “On Correcting the Intrusion of Tracing Non-deterministic Programs by Software”, “A User-Friendly and Extendable Data Distribution System”, “Multi-flip Networks: Parallelizing GenSAT”, “Self-determinations of Man”.

**Table 1.** Font sizes of headings. Table captions should always be positioned *above* the tables. The final sentence of a table caption should end without a full stop

Heading level	Example	Font size and style
Title (centered)	<b>Lecture Notes ...</b>	14 point, bold
1st-level heading	<b>1 Introduction</b>	12 point, bold
2nd-level heading	<b>2.1 Printing Area</b>	10 point, bold
3rd-level heading	<b>Headings.</b> Text follows ...	10 point, bold
4th-level heading	<i>Remark.</i> Text follows ...	10 point, italic

**Lemmas, Propositions, and Theorems.** The numbers accorded to lemmas, propositions, and theorems etc. should appear in consecutive order, starting with the number 1, and not, for example, with the number 11.

4.3 Figures and Photographs

Please produce your figures electronically and integrate them into your text file. For L<sup>A</sup>T<sub>E</sub>X users we recommend using package `graphicx` or the style files `psfig` or `epsf`.

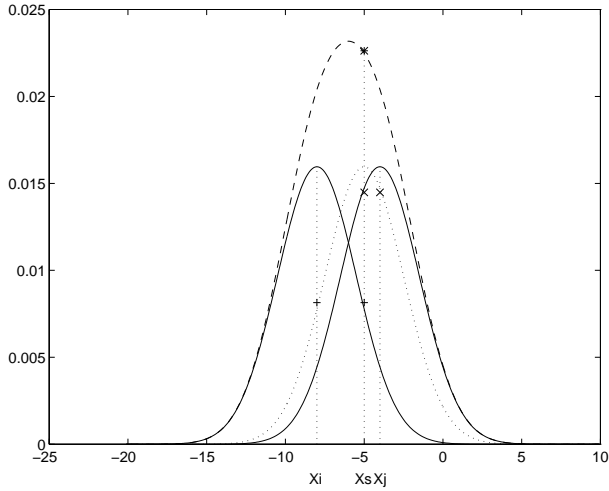
Check that in line drawings, lines are not interrupted and have constant width. Grids and details within the figures must be clearly readable and may not be written one on top of the other. Line drawings should have a resolution of at least 800 dpi (preferably 1200 dpi). For digital halftones 300 dpi is usually sufficient. The lettering in figures should have a height of 2 mm (10-point type). Figures should be scaled up or down accordingly. Please do not use any absolute coordinates in figures.

Figures should be numbered and should have a caption which should always be positioned *under* the figures, in contrast to the caption belonging to a table, which should always appear *above* the table. Please center the captions between the margins and set them in 9-point type (Fig. 1 shows an example). The distance between text and figure should be about 8 mm, the distance between figure and caption about 5 mm.

If possible (e.g. if you use L<sup>A</sup>T<sub>E</sub>X) please define figures as floating objects. L<sup>A</sup>T<sub>E</sub>X users, please avoid using the location parameter “h” for “here”. If you have to insert a pagebreak before a figure, please ensure that the previous page is completely filled.

4.4 Formulas

Displayed equations or formulas are centered and set on a separate line (with an extra line or halfline space above and below). Displayed expressions should be numbered for reference. The numbers should be consecutive within the contribution, with numbers enclosed in parentheses and set on the right margin. For



**Fig. 1.** One kernel at  $x_s$  (*dotted kernel*) or two kernels at  $x_i$  and  $x_j$  (*left and right*) lead to the same summed estimate at  $x_s$ . This shows a figure consisting of different types of lines. Elements of the figure described in the caption should be set in *italics*, in parentheses, as shown in this sample caption. The last sentence of a figure caption should generally end without a full stop

example,

$$\begin{aligned} \psi(u) &= \int_0^T \left[ \frac{1}{2} (A_0^{-1}u, u) + N^*(-u) \right] dt \\ &= 0? \end{aligned} \tag{1}$$
$$\tag{2}$$

Please punctuate a displayed equation in the same way as ordinary text but with a small space before the end punctuation.

#### 4.5 Footnotes

The superscript numeral used to refer to a footnote appears in the text either directly after the word to be discussed or, in relation to a phrase or a sentence, following the punctuation sign (comma, semicolon, or full stop). Footnotes should appear at the bottom of the normal text area, with a line of about 2 cm in T<sub>E</sub>X and about 5 cm in Word set immediately above them.<sup>1</sup>

#### 4.6 Program Code

Program listings or program commands in the text are normally set in typewriter font, e.g., CMTT10 or Courier.

<sup>1</sup> The footnote numeral is set flush left and the text follows with the usual word spacing. Second and subsequent lines are indented. Footnotes should end with a full stop.

### Example of a Computer Program

```

program Inflation (Output)
{Assuming annual inflation rates of 7%, 8%, and 10%,...
  years};
const
  MaxYears = 10;
var
  Year: 0..MaxYears;
  Factor1, Factor2, Factor3: Real;
begin
  Year := 0;
  Factor1 := 1.0; Factor2 := 1.0; Factor3 := 1.0;
  WriteLn('Year  7% 8% 10%'); WriteLn;
  repeat
    Year := Year + 1;
    Factor1 := Factor1 * 1.07;
    Factor2 := Factor2 * 1.08;
    Factor3 := Factor3 * 1.10;
    WriteLn(Year:5,Factor1:7:3,Factor2:7:3,Factor3:7:3)
  until Year = MaxYears
end.

```

(Example from Jensen K., Wirth N. (1991) Pascal user manual and report. Springer, New York)

## 4.7 Citations

The list of references is headed “References” and is not assigned a number in the decimal system of headings. The list should be set in small print and placed at the end of your contribution, in front of the appendix, if one exists. Please do not insert a pagebreak before the list of references if the page is not completely filled. An example is given at the end of this information sheet. For citations in the text please use square brackets and consecutive numbers: [3], [4], [5] ...

## 5 Conclusions

The paper ends with a conclusion.

Page 8 of the manuscript.

315		315
316		316
317		317
318		318
319		319
320		320
321		321
322		322
323		323
324		324
325		325
326		326
327		327
328		328
329		329
330		330
331		331
332		332
333		333
334		334
335		335
336		336
337		337
338		338
339		339
340		340
341		341
342		342
343		343
344		344
345		345
346		346
347		347
348		348
349		349
350		350
351		351
352		352
353		353
354		354
355		355
356		356
357		357
358		358
359		359



Page 9 of the manuscript.

Page 10 of the manuscript.

Page 11 of the manuscript.

Page 12 of the manuscript.

495	495
496	496
497	497
498	498
499	499
500	500
501	501
502	502
503	503
504	504
505	505
506	506
507	507
508	508
509	509
510	510
511	511
512	512
513	513
514	514
515	515
516	516
517	517
518	518
519	519
520	520
521	521
522	522
523	523
524	524
525	525
526	526
527	527
528	528
529	529
530	530
531	531
532	532
533	533
534	534
535	535
536	536
537	537
538	538
539	539

Page 13 of the manuscript.

540	540
541	541
542	542
543	543
544	544
545	545
546	546
547	547
548	548
549	549
550	550
551	551
552	552
553	553
554	554
555	555
556	556
557	557
558	558
559	559
560	560
561	561
562	562
563	563
564	564
565	565
566	566
567	567
568	568
569	569
570	570
571	571
572	572
573	573
574	574
575	575
576	576
577	577
578	578
579	579
580	580
581	581
582	582
583	583
584	584

Page 14 of the manuscript. This is the last page of the manuscript.

Now we have reached the maximum size of the ECCV 2018 submission (excluding references). References should start immediately after the main text, but can continue on p.15 if needed.

## References

1. Authors: The frobnicatable foo filter (2014) BMVC14 submission ID 324. Supplied as additional material **bmvc14.pdf**.
2. Authors: Frobnication tutorial (2014) Supplied as additional material **tr.pdf**.
3. Alpher, A.: Frobnication. *Journal of Foo* **12**(1) (2002) 234–778
4. Alpher, A., , Fotheringham-Smythe, J.P.N.: Frobnication revisited. *Journal of Foo* **13**(1) (2003) 234–778
5. Alpher, A., , Fotheringham-Smythe, J.P.N., Gamow, G.: Can a machine frobnicate? *Journal of Foo* **14**(1) (2004) 234–778