Tips for writing your 6 page conference paper

General:

Conform to the IEEE Conference template:

www.ieee.org/conferences_events/conferences/publishing/templates.html

Overall, your paper should be well structured paper with good use of images and diagrams - so follow advice from the checklist below. This is an academic paper (rather than an engineering report), so do not mention failures or running out of time. In the "Future Research" sub-section at the end of "Conclusion", you can phrase in a positive way what you would do next (as though you had unlimited time). Purge the word "project" from your paper.

Avoid colloquialisms such as cheap, piece, amazing, spot, impressive, tweaking, tricky, solid algorithm

Use "This paper proposes a method" instead of "The goal of this paper is to demonstrate a system".

Use "These results show that the proposed approach can" instead of "These results show that the system can"

Do not mention the phrase "computer vision" as this is too broad for a paper in a computer vision conference.

OpenCV (or other open source/etc):

The only time to mention OpenCV is at the beginning of your method or results section.

Do not mention the word, "OpenCV" or name OpenCV functions used anywhere else in your paper. But instead, name and describe the algorithms used by that OpenCV function.

That is, instead of naming any specific OpenCV functions, explain/elaborate on the underlying algorithms - even replicating relevant maths from text books, etc in your background section.

Abstract:

Begin the abstract with something like "This paper proposes a method to ...". The abstract needs to be a very technical overview of your paper - so mention names of algorithms you are using. Finally close the abstract with mentioning at least one result number (and hopefully a comparison with prior research results).

Note that the abstract is treated as a self-contained independent document (with no references), separate

from the main text of your paper. This means that text can be repeated word-for-word in both the abstract and main text. (So if an acronym was used in the abstract, then it would need to be defined on first usage in both the abstract and main body of text.)

Proposed Method:

At least three different computer vision algorithm names would be expected here (or only two at a pinch). "Novel" can mean the tiniest miniscule tweak to an existing algorithm or mix of existing algorithms. (However novelty is not a mandatory requirement for A+)

Results:

At the beginning of results (or at the beginning of method), mention your OS, processor, speed, IDE, language, device(PC/smartphone/etc), camera(resolution,frame-rate,etc), OpenCV version, etc. You need to find a way to quantify your results. For example, manually mark locations on test images (ground

truth) to numerically compare computed results with the actual locations in a frame/image.

Try to quantitatively compare your results with something from prior research. (Look for survey papers on your topic - a great way to start to find a paper with quantitative results.)

Conclusion:

Start with a very brief summary of the results and then quantitatively compare these with something from prior research.

As mentioned above, have a "Future Research" sub-section at the end of "Conclusion", where you can phrase in a positive way what you would do next (as though you had unlimited time).

References:

Ensure that all your references to conform to the IEEE Citation Style Guide below (page numbers are optional). Note the citation format for a prior COSC428 report.

IEEE Citation Style Guide

The IEEE citation style has 3 main features:

- The author name is first name (or initial) and then last name. (This differs from MLA style where author's last name is first.)

- The title of an article (or chapter, conference paper, patent etc.) is in quotation marks.

- The title of the journal, conference or book is in italics.

Article in a Journal

Author(s). "Article title". *Journal title*, vol., pp, date.

Example: G. Pevere. "Infrared Nation." *The International Journal of Infrared Design*, vol. 33, pp. 56-99, Jan. 1979.

Article in a Conference

Author(s). "Article title." *Conference proceedings*, year, pp.

Example: D.B. Payne and H.G. Gunhold. "Digital sundials and broadband technology," in *Proc. IOOC-ECOC*, 1986, pp. 557-998.

Book

Authors. *Book title*. Location: Publishing company, year, pp

Example: W.K. Chen. *Linear Networks and Systems*. Belmont, CA: Wadsworth, 1993, pp. 123-35.

Book Chapter

Author(s). "Chapter title" in *Book title*, edition, volume. Editors name, Ed. Publishing location: Publishing company, year, pp.

Example: J.E. Bourne. "Synthetic structure of industrial plastics," in *Plastics*, 2nd ed., vol. 3. J. Peters, Ed. New York: McGraw-Hill, 1964, pp.15-67.

World Wide Web

Author(s)*. "Title." Internet: complete URL, date updated* [date accessed].

Example: M. Duncan. "Engineering Concepts on Ice. Internet: www.iceengg.edu/staff.html, Oct. 25, 2000 [Nov. 29, 2003].

Dissertations and Theses

Author. "Title." Degree level, school, location, year.

Example: S. Mack. "Desperate Optimism." M.A. thesis, University of Calgary, Canada, 2000.

Reports (such as a previous COSC428 paper)

Author, "Title." Abbrev. Name of Co., City of Co., Abbrev. State, Rep. xxx, year.

Example: Brian Goulter and Richard Green, "Eye gaze tracking", Computer Vision Lab, University of Canterbury, Tech. Rep., May 2013

Background Research Tips:

Other than Google, you can find relevant references on Google Scholar and Web of science (Uni home page, library, Databases, W, Web of science).

Beyond those sites, you may (or may not) find useful CiteSeer (http://citeseer.ist.psu.edu) and/or IEEE Xplore (Uni home page, library, Databases, I, IEEE Xplore).

Generally, try to find a paper where someone is attempting to do something similar to you.
So when looking at papers, first just check the title. It that seems relevant, then check the abstract. If that still seems relevant look at the conclusion – their future research section of the conclusion often tells you their limitations which they hope to fix in the future – so useful to know for being critical of their work. If this paper still seems relevant, their background literature review might be useful for you to mine for ideas for your own literature review. Your time is precious, so only read a paper right

through if it is really relevant and perhaps you want to try and replicate it.

Choosing the right key words to search on is an art as much as a science - you get better the more you try - constantly refine the key words you use - look for more key words used in relevant papers.

Paper reviewers

Reviewers" (usually 3 per paper) marking schedule is to give a score of

- 5=excellent, 4=good, 3=fair, 2=poor, 1= very poor
- for each of the following categories: Originality, Clarity of presentation, Technical soundness, Significance, Relevance to the Conference, References
- and the reviewer should also provide a detailed review, including justification for scores

Checklist/guide for writing a research paper for publication

(where red items are most important)

title with your name followed by name of supervisor (me in this case)

abstract is an summary/overview of the entire paper (independent of the rest of the paper)

introduction

* goal / problem statement (what is your goal/what problem are you solving)

background (focused specifically on concepts/papers related directly to your work - not too general)

* cite publications **critically** (be critical of prior research => mention limits/constraints/etc)

* equations (you may be able to find many of these in other papers/text books)

* diagrams (you may be able to find many of these in other papers/text books)

* images (you may be able to find many of these in other papers/text books)

* summarise limitations of prior research

      (the entire reason for doing this paper and also shows that you can read critically)

solution/method

* how your solution overcomes limitations of prior research

* equations (may be old equation with slight tweak)

* diagrams

* images

results

* must be quantified - i.e. numbers, not just images (this is science/engineering research, not arts research)

* graphs and/or tables

* images

* limitations of your research (gives more credibility)

conclusion

* results (very brief i.e. one sentence summing up results)

* how your research improved on (or compares with) prior research

      (quantify and cite the prior research you are comparing with)

* limitations of your research (very brief)

* future research to overcome these limitations

references (around say 15-25 references)

* recent (at least a quarter in the last few years - shows you did a recent literature review)

* quality (at least half should be journals/conferences – preferred over websites)

* if websites are referenced, date (month/year) the last time you accessed it

* reviewers are really fussy about consistency (such as does the year always come last, etc)