

# Metaprogramming with Macros

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**Abstract**—About 60 to 100 words describing what this 4–8 page write-up is about. Start with an abstract that clearly identifies the problem, the contribution of the paper, and the results (if any) or ongoing research. This is not a whole lot of words. This abstract is 48 words.

**Index Terms**—metaprogramming, macros, quasiquotes, hygiene, referential transparency

## I. INTRODUCTION

THIS template is not trying to suggest a specific style for the content of your candidacy exam/thesis proposal paper; it only concerns the style of the writeup itself. This template is in LaTeX. We encourage you to use it for your write-up.

If you insist on using a different word processing program please match the style as much as possible. Here is the basic format: The paper size is A4, the font is 10 point, single-spacing, “times roman like.” Two columns, each 8.75 cm wide, with 1.5 cm left/right margins. Sections and sub-sections have bold numbered headings. Figures have captions underneath, with a bold label and number, and also a short caption sentence. Ditto for tables. The text itself is a mix of standard paragraphs, bullets, numbered lists, and equations where appropriate. References are at the end, in a numbered format, in a slightly smaller font.

Proposal submitted to committee: September 3rd, 2012;  
Candidacy exam date: September 10th, 2012; Candidacy exam committee: Christoph Koch, Martin Odersky, Viktor Kuncak.

This research plan has been approved:

Date: \_\_\_\_\_

Doctoral candidate: \_\_\_\_\_  
(name and signature)

Thesis director: \_\_\_\_\_  
(name and signature)

Thesis co-director: \_\_\_\_\_  
(if applicable) (name and signature)

Doct. prog. director: \_\_\_\_\_  
(R. Urbanke) (signature)

The overall length of this write-up should be 4-8 pages.

### A. Purpose of this Write-Up

This write-up serves two purposes. First, it forms the basis for your candidacy exam. As such you should summarize the three papers selected by your advisor and yourself, and analyze as well as discuss them critically. Second, the write-up is also your thesis proposal. Therefore, the last one or two pages should be dedicated to your own preliminary work. A road-map of how you plan to advance the state of the art in your chosen area should also be given. For further details please consult the document “PhD Candidacy Exam Overview.” You can find the latest version at <http://phd.epfl.ch/page57746-en.html>.

### B. What to Put into the Introduction

Describe briefly the context, the problem, shortcomings in prior approaches, and your proposed approach and solution. Forecast results.

## II. SURVEY OF THE SELECTED PAPERS: THE GIANTS UPON WHOSE SHOULDERS I WILL STAND

Background — Describe the three papers in detail, the problem they tackle, the solutions and results, and their shortcomings, and how they relate to your work. This part builds the basis for the oral candidacy exam.

## III. RESEARCH PROPOSAL: HOW I PLAN TO REVOLUTIONIZE THE WORLD

Describe your own work and include a summary and references. Write how you propose to advance the state of the art given the background. What is new technically? How does it improve over prior work? Summarize, suggest an approximate timeline, and list references.

## REFERENCES

- [1] F. Mittelbach, M. Goossens, J. Braams, D. Carlisle, and C. Rowley, *The L<sup>A</sup>T<sub>E</sub>X Companion*, 2nd ed. Addison-Wesley Professional, 2004.