PROSPECTUS GUIDELINES

School of Computing
College of Computing, Engineering, and Construction
University of North Florida
Jacksonville, FL 32224-2645
(904) 620-2985

http://www.unf.edu/ccec/cis

Prospectus Content

Before work on a master's thesis is developed, a prospectus, i.e., a written outline of the proposed research, must be prepared by the student and be both presented and approved by the student's graduate committee. This prospectus must describe the problems addressed and their significance, provide sufficient background material to convince the committee the research is worth doing (and has not already been done), and demonstrate convincingly the student has the intellectual skills and the in-depth knowledge in the field of application to undertake the research. The document should contain sections on

- statement of the problem
- literature review
- research methodology
- expected results
- expected contributions
- hardware/software requirements
- timeline
- references, and
- appendices (other documentation that clearly defines the research).

The prospectus should lead to the thesis and, therefore, conform to thesis guidelines and formatting as specified below.

Students should develop this document early in the first semester in which they enroll in thesis and be prepared to defend it in front of the masters committee. The student should provide any communication aides (power point) to the committee preceding the presentation.

The student must obtain committee member's signatures on "Enrollment form: CIS 6970" upon conclusion of a successful defense of the prospectus.

School of Computing Checklist:

I. Document organization:

A. General requirements
  [   ] Paper (8 1/2" x 11") - original & copies
      (Any 11" x 14" materials must be reduced to 8 1/2" x 11")
  [   ] Text on one side of paper only
  [   ] Standard type-face (Roman) of uniform size, color, and density (12 point,
      black, with a print density of at least 90,000 dots per square inch,
      resolution density of at least 300 dots per inch)
  [   ] Tables, figures and appendices may use a different type-face and point
      size, but must conform to the above density requirements
  [   ] Any use of color in tables, figures and appendices should be sparing,
      used only if called for, duplicated across all copies submitted for binding,
      and dark so it will photocopy.
  [   ] Double-spaced main text,
  [   ] Single-spaced multi-line titles, footnotes and long quotations
  [   ] Appropriate spacing for tables, figures, appendices, and reference list as
      appropriate
  [   ] Text should **not** be right justified
  [   ] Left margin = 1 1/2" (or **slight** error to the larger)
  [   ] Top, bottom, and side margins ≥ 1" (pagination in bottom margin)
  [   ] Pagination according to format (lower case Roman numerals prior to
      main text; Arabic numerals for rest of text; page number omitted on the
      title page only)

B. Prospectus components
  [   ] Title page
  [   ] Table of contents
  [   ] List of tables/figures (only if appropriate)
  [   ] Body of text
  [   ] Reference list
  [   ] Appendices (only if appropriate)

Style Notes

–Refer to ACM (Association for Computing Machinery), *Handbook of Technical Writing* (St. Martin's Press), *Science and Technical Writing* (Routledge), and *A Manual for Writers of Term Papers, Thesis, and Dissertations* (Turabian – in Bookstore) for commonly accepted standards for technical writing:

I. **Text Justification and Hyphenation**

    A. Hyphenate at end of lines with discretion and only to improve appearance.

II. **Personal Pronouns and Verb Tense**

    A. Do **not** use first person singular. Use either first person plural ("we") or third person singular ("the author ... she").

    B. Verbs should be in past tense. The project is over and you are writing about what you did in the past.

III. **Typing, type fonts, point size, and method of production**

    A. Use black ink only, of uniform darkness and density throughout. Use one side of the paper only.

    B. With the possible exception of figures, produce the document via a single printing device. Use only a standard typeface equivalent to Roman, 12 point. Present any program listing in Courier, since it uses a uniform spacing amount per character, and employ Roman everywhere else in the document. Do not use font variations such as shadow, outline, emboss, or engrave. Italic and Bold are only to be used sparingly, and only when appropriate (if in doubt, ask).

    C. Figures and appendices may require preparation on a different device (such as a plotter) and some amount of hand drawing. A different typeface and point size may be required. The 8 1/2" by 11" page size for the prospectus may require photo composition/reduction (any pages of the sort will also need to be scanned in for the electronic copy). Be careful all figures and appendices are clean, carefully prepared, and legible. All hand drawing should be professional in appearance. Be careful to use appropriate drawing materials (many felt tip pens are not acceptable). If in doubt, ask.

    D. Generally, laser printers and ink jet printers are acceptable for production of the prospectus when they are working properly. Dot matrix printers are not. Do not expect "gray," streaked, uneven, or spotted copy to be accepted. The printer used must be able to print on thesis paper. You are responsible for acquiring all the media needed to produce your prospectus. Note that the

appropriate paper for archiving purposes is considerably more expensive than that used for every day printing needs, so you should not print your final copy on this paper until cleared to do so by the School of Computing Office.

IV.   Margins

A. A margin of 1 1/2" on the left (or **slightly** greater) is absolutely necessary for binding purposes. Top, bottom and right margins should be $\geq$ 1". Pagination goes in the bottom margin 1/2" from the bottom of each page.

B. For widows and orphans:

If the first line of a new paragraph would come at the bottom of a page, simply put it on the next page leaving an extra space between text and pagination at the bottom of the preceding page.

If the last line of a paragraph would come at the top of the next page, put the last two lines of the paragraph at the top of the next page leaving an extra space between text and pagination at the bottom of the preceding page.

C. For the prospectus title page:
Center the text on the page with 2 1/2" margins at the top and bottom. See the sample title page for an example.

D. For titled pages; namely, the first page of each major component (e.g., CONTENTS, REFERENCES) and the first page of each chapter in the text body:

Increase the top margin to 1 1/2" above the title. See the samples for examples. When double-spacing, you may use 4 extra lines (single-spaced) above the title information to correspond to the normal double-space advance.

V.   Style Notes

A. Preface material, in the manner indicated on the "SAMPLE:" pages that follow

Title page - within groupings as indicated on the SAMPLE: TITLE PAGE
* Table of contents - as illustrated on the SAMPLE: TABLE OF CONTENTS
* List of tables - same format as for the list of figures
* List of figures - as illustrated on the SAMPLE: LIST OF FIGURES

* For these, single spacing is used only on items needing more than 1 line of text

B. In the main text body

Multi-line titles - for example, a section title that requires more than one line to fit within margins
Footnotes
Long quotations - these should be offset with an indent, left and right of 1/2" (5 spaces)
* Tables and figures - see the SAMPLE: TEXT BODY for an illustration (Note that tables and figures should also be **boxed**)
Appendices (you may also reduce font point size to as low as 8)
Reference list - see sample: references

* For these, single spacing is used only on items needing more than 1 line of text

VI. Where to Double Space

A. In the table of contents, list of tables, and list of figures **except for items requiring more than 1 line** as noted above in V.

B. In the main text body except as noted above in V.

VII. Pagination

A. Do not paginate the title page.

B. For the pages immediately following the title page and preceding the main text, paginate using lower case Roman (ii, iii, iv, v, etc.).

C. Beginning with the main text body use the form

D. Center pagination at the **bottom** of the page 1/2" above the bottom of the page.

For examples, see the SAMPLE pages that follow.

VIII. Paragraphs and Lists

A. Do not begin paragraphs with an indent. Instead separate paragraphs with a blank line in single-spaced text and 3 blank lines in double-spaced text (one extra double line).

B. A series of points may be emphasized by indenting them, marking each with a "bullet" (e.g. "•").

VIX.   Chapter and Section Headings

A. Begin each chapter on a new page with the title in the form centered, with a 1.5" margin above and 2 lines below (add one extra line when double-spacing). If the title is too long to fit, single-space the continuation onto the next line.

B. Identify sections of chapters by adding decimal qualification to the chapter number; (e.g., 3.1, 3.2, ...) or sub qualification such as 3.1.1. 3.1.2, ... for subsections. For both sections and subsections, left justify and title using the format:

2.3.2 Circular Analysis

Separate the section title from the surrounding text by 2 blank lines (an extra single-space line when double-spacing); see the body of text sample for examples.

X.   Tables and figures

A. Place tables and figures as near after the paragraph in which they are referenced in the text as feasible.

B. Draw a box around the table or figure to offset

C. Center the title of the table or figure immediately under the box; use the title format
Figure 1: Real-time Raster Feedback
See the body of text sample for an example.

D. Leave at least 3 blank lines between the table or figure and any surrounding text (an extra carriage return when double-spacing).

XI.   Referencing

A. Identify references in the reference list by the notation
[<lead author last name><last 2 digits of year>]

e.g., [Williams96]

If the author has more than one article in the year add qualifiers A, B,... to identify each particular reference;

e.g., [Henry97A] and [Henry97B]

If the reference has no identified author, use an abbreviation of the reference title in place of the lead author last name. Print publications should always have a date. For electronic sources, there may be as many as three dates giving year of publication, year of last update, and year of last access. The first of these dates that can be included in the reference is the one to use for the last 2 digits of the year.

Further examples for this format are in the example reference list.

B. Separate references into two sections:
    Print publications
    Electronic sources

C. Alphabetize each of these sections on the reference identifiers.

D. For print publications provide detail on each reference to include in order:
    Lead author, last name first and at least one initial.
    Co-authors, initials followed by last name; list all co-authors.
    Title of the article in quotes (omit if the reference is a book).
    Title of the journal (or book) in which the article appears, <u>underlined (continuous)</u>.

    For periodicals: Volume number, issue number then in parentheses
    the month (if available) and year of the publication.
        <editor name>, ed. for papers referenced from edited collections.
        Publisher and city for books and edited collections only.
        For books and edited collections: year of the publication.
        Page numbers on which the article appears (for journals and edited
            collections only).

E. Electronic sources:
    Use electronic sources (such as web references) only if you know the source is relatively stable. If a source is available as a print publication, include only the print publication reference, even if your own access to the source has been electronic.

    For electronic-only media provide detail on each reference to include in order:
        The lead author (if known), last name first and at least one initial.
        Co-authors, initials followed by last name; if more than 3 use "et al." after
            the lead author to acknowledge the extra ones.
        Title of the online document and/or title of the web site (if not obvious, try
            looking at the page source <title> section and failing that use the
            subject line for the document). Put the title in quotes if the site is one
            containing multiple articles.

For on-line periodicals: Volume number, issue number, then in parentheses the month (if available) and year of the publication.

URL for the reference.

For other than on-line periodicals, provide the date or date last changed if provided on the site.

Date you last accessed the source electronically – accessibility for all electronic references should be verified in producing the final draft of your paper; any reference no longer accessible should be deleted.

F. Odd cases such as dissertations, material on CDs but not the web, references without identified authors and other similar citations are illustrated in the example reference list. In general, give sufficient information to enable an interested reader to obtain the reference material, if so desired. This kind of material should be included in the section (print or electronic) that best represents the nature of the material (e.g., a CD is electronic, government document is print). Unpublished information should be referenced only if it is not critical to the prospectus and even then only if it can be obtained by interested parties relatively easily. Place any email communication in the appendix and cite it there.

G. In the body of the text notate a reference by using its identification; e.g., [Williams96]. A specific page or pages may also be identified by the notation [Williams96, page 13] or [Williams96, pp. 13-15]. Additional examples are in the example main text body.

XII.   Footnotes

If used, footnotes should be numbered consecutively, 1, 2, 3, ...

The footnote reference in the text should occur as a superscript number with the footnote placed at the bottom of the page on which the reference occurs.

Most word processors handle footnotes automatically; if not, separate the footnote[1] from the text by 3 or more blank lines and a 2" line; e.g.,

---

[1]   This is a footnote example; if it exceeds one line single-space.

REAL-TIME ANALYSIS OF RASTER FEEDBACK
ALGORITHMS IN PARTIALLY PARALLEL IMPLEMENTATIONS

by

Ima Soc Student

A prospectus submitted to the
School of Computing
in partial fulfillment of the requirements for the degree of

Master of Science in Computer and Information Sciences

UNIVERSITY OF NORTH FLORIDA
SCHOOL OF COMPUTING

April 2010

CONTENTS

FIGURES

Chapter 1

INTRODUCTION

Raster feedback algorithms were initially formulated in conjunction with the AZ10

project [Williams02] as the most promising means of achieving true parallelism in black

box processors. A black box processor is one that "has known response characteristics

for specific inputs, but which may behave unpredictably in other circumstances"

[French96, page 14]. While a number of techniques have been developed for the analysis

of raster feedback algorithms [e.g., Henry03A, Tsou04], very little is known regarding

accomplishing the analysis in real time. Since raster feedback algorithms are normally

considered only in the true parallel context, construction of effective analytical

techniques for real-time function has proven to be an elusive research goal to date

[Anraha05].

In this paper, we approach the problem from a more restrictive viewpoint; namely, . . .

.   .   .

. . . in a recent article on rastering techniques . . .

.   .   .

of [Tsou04]. This solution has weaknesses that can be partially addressed if the problem

is approached via the tactic of partially parallel implementation.

1.1   Feedback Mechanisms

The basic feedback mechanism usually employed is that of alpha-beta response . . .

. . . which is not the case for all systems studied.

1.1.1   Ghost Response in Some Implementations

Various authors have reported that . . .

.   .   .

. . . in the first case. In the second case the situation is not . . .

. . .

. . . as easily understood. This can be seen by considering the case of three processors as

pictured in Figure 1. The first processor serves as a …
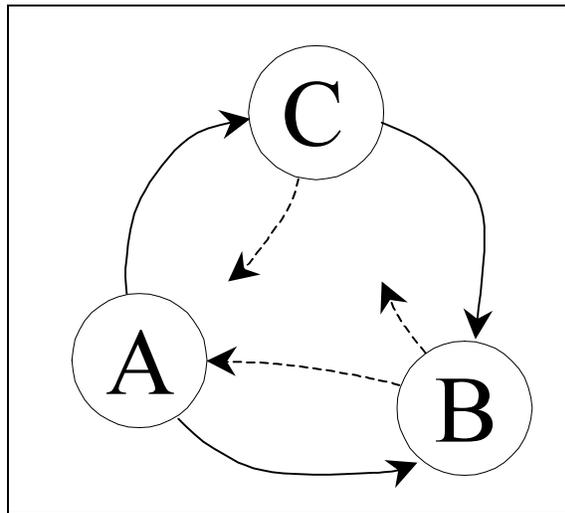
The final processor is caught in transition.

Figure 1: Real-time Raster Feedback
under Processor Control

This demonstrates the viability of the paradigm …

.   .   .

. . . leading on to the conclusion that not every approach is reasonable.

The PMX workstation used for the experiment was programmed in the most recent

revision of PP-C [PP-C03]. Others [Kuthbert04, PMX Experimentation02, Thornton04]

have conducted experiments similar to ours, but …

Chapter 2

PARTIALLY PARALLEL ANALYSIS

In this chapter, . . .

. . . which has interesting outcomes for PMX workstation environments.

2.1   Fractional Feedback Analysis

2.1.1   Deep Transcendence in Depth-First vs. Breadth-First Analysis of
         Contemporaneous Rasterization Approaches to High-Level Computing
         Environments

In considering the problem of deep transcendence . . .

REFERENCES

Print Publications:

[Anraha05]
Anraha, T. L and G. T. Smith, "Real-time Anomalies in Processing Feedback
    Algorithms," <u>IEEE Transactions on Parallel Computing</u> 3, 2 (2005), pp. 78-85.

[ANSI89]
American National Standards Institute, <u>American National Standard Programming
    Language PP-C</u>, ANSI X7.29, New York, 1989.

[Culloghtsen97]
Culloghtsen, S. S., "A Simple Approach to Rastering Analysis," <u>Rastering Analysis</u>,
    C. H. Vick, ed., McGraw-Hill, New York, 1997, pp. 87-92.

[French96]
French, A. B., <u>Black Box Systems and Algorithms</u>, Arguile and Sons, Paris, 1996.

[Gargantus prep]
Gargantus, N. F., "Real-Time Semi-rastered Analytical Inversions for MK-series
    Processors," accepted for publication subject to revision in <u>IEEE Transactions on
    Parallel Computing</u>, contact AG Enterprises, Inc., 132 North Ridge Circle,
    Salmonville, WA 87321.

[Henry03A]
Henry, R. J., T. C. Chen, F. Sturbin, and J. Coldster, "Report on the ARGH Workshop on
    Raster Feedback Algorithms," <u>Proceedings of the 2003 ACM Conference on Parallel
    Computing</u> 1, 1 (February, 2003), pp. 135-137.

[Henry03B]
Henry, R. J. and T. C. Chen, "Rastering Feedback in Dual-processor Systems,"
    <u>Proceedings of the 2003 ACM Conference on Parallel Computing</u> 1, 1 (February,
    2003), pp. 39-44.

[Henry03C]
Henry, R. J., "Some Recent Results on Raster Feedback Analysis," Technical Report
    USNY-CSE-122, Department of Computer Science and Engineering, University of
    Schenectady, New York, 2003.

[PP-C03]
PP-C User's Manual for PMX Workstations, Preston-Manllichsen Co., Fresno, CA, 2003.

[Tsou04]
Tsou, A. K., R. C. Calumbe, and K. L. Taylor, "A Static Approach to the Analysis of Raster Feedback Algorithms," <u>Journal Nationale de France</u> 53, 1 (January, 2004), pp. 35-63.

[Williams02]
Williams, A. B., "Fast Response in Parallel Implementations for Raster Feedback," Ph.D. dissertation, Department of Biocomputing, University of Southwest Arkansas, North Platte, 2002.

Electronic Sources:

[GRASP04]
GRASP lab, http://www.cis.upenn.edu/~grasp/new/home.shtml, last revision March 3, 2004, last accessed April 15, 2006.

[Kuthbert03]
Kuthbert, A. P., "Experiments Using PP-C," http://www.PMX.com/PPC/trials.html, 2003, last accessed April 3, 2006.

[PMX Experimentation02]
PMX Experimentation with PP-C, 2002, available only on CD-ROM by order from PMX Corporation, http://www.PMX.com/archival_sales.html, last accessed April 1, 2006.

[Sloan05]
Sloan, G. T. and R. V. Andrews, "Comparison of PMX/PP-C implementations with RPP/04," <u>University of East Nevada Lecture Series</u>, 3 (January 2005), http://www.uen.edu/UENLS06/papers/gtsloan.pdf, last accessed April 15, 2006.

[Thornton04]
Thornton, H., "PP-C Trials and Travails," http://www.avu.edu/~hthornton/PPC/ex3.html, last revision 2004, last accessed April 15, 2006.

[ZSTORM03]
ZSTORM API Specification, 2003, download from http://www.zstorm.org/downloads, last accessed March 15, 2006.

APPENDIX A

MUX-1 Code Listings

```
*   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *
*                                                                           *
*  Program name: MainMUX  . . .                                             *

      . . .
```