

Chalmers Computing Lab Tech Talks

Guidelines on Popular Essay Writing

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Chalmers

Outline

Guidelines on Popular Science Essay Writing

- Choice of a Topic

- Structure of a Popular Essay

- Formatting Guidelines

- An Example

Organizational Issues of this Course

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Organizational Issues of this Course

Choice of a Topic

- ▶ Choose one challenge from the industry presentations

`http://www.cse.chalmers.se/~laurako/links/CCTT.html`

- ▶ Hint: The title of the industry presentation is a good topic

Guidelines for Writing a Popular Science Essay

- ▶ Highlight the **relevance**: impact on society;
- ▶ Clarify the **topic**: present the problem;
- ▶ Think of the **reading audience!**
(professional background, age, not much (if any) formal methods/math expertise, etc.)
 - ▶ Does not know the specific research topic;
 - ▶ Knows very little about computers, likely nothing about computer science;
- ▶ Focus on **concepts**, not details;
- ▶ Underline **advantages/disadvantages**.

Essay Size

Five A4 pages

Structure of a Popular Essay — Not of a research paper!

1. Title block:

- ▶ Title of the topic, where it comes from;;
- ▶ your name+affiliation;

2. Introduction:

- ▶ Motivation, importance and impact of the topic;
- ▶ Information on the industry where the challenge arises from;

3. Main part of the essay:

- ▶ presentation of topic (explain via examples/daily life scenarios);
- ▶ describe possible solutions;

4. Conclusion: summarizing comments on

- ▶ the topic and its impact.

Use of Terminology

- ▶ Avoid the use of formulas; If you still choose to use some formulas, then use descriptive variable names:

$$v = \frac{d}{t} \quad \rightarrow \quad \textit{velocity} = \frac{\textit{distance}}{\textit{name}}$$

- ▶ Avoid the greek letters, math expressions;
- ▶ Avoid using detailed code snippets; You could use code to highlight that programs are big and complicated, but do not expect readers will understand the example code.

An Example

– see slide #24

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Essay Submission and Reviewing

- ▶ Essay submissions will be made online, using EasyChair

`https://easychair.org/conferences/?conf=ccth15`

- ▶ Essays are **due by March 16, 2015**;
- ▶ Essay bidding, reviewing, PC discussions will be made online, using EasyChair;
— check the **CCTT calendar** on EasyChair for important dates);
- ▶ Final decisions will be made on **April 1, 2015**.

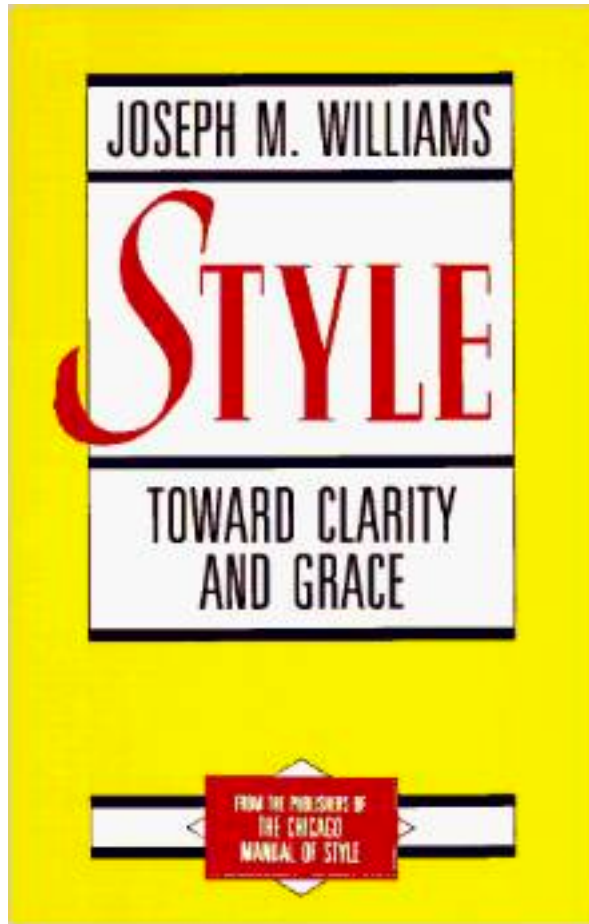
Becoming a better writer

Thanks to **Norman Ramsey** for inspiration and content

[Norman Ramsey's course on writing at Tufts](http://www.cs.tufts.edu/comp/150TW/)

<http://www.cs.tufts.edu/comp/150TW/>

Get this book



[1995 edition](#), not posthumous ones

Share in a group to start with

See also 10 lessons ...

Write in brief daily sessions

Ramsey's practice #1 of 7

Consider also following Ramsey's advice about building up a portfolio and keeping a lab book

Put your important characters in **subjects**, and join each subject to a **verb** that expresses a significant action. When applicable, say what **object** is acted upon.

Ramsey's principle #3 of 9

Principles are chosen for being TESTABLE

A sentence seems clear when its important actions are in verbs

A sentence seems clear when its important actions are in verbs

The outsourcing of high-tech work to Asia by corporations means the loss of jobs for many American workers.

Diagnose

The outsourcing of high-tech work to Asia by corporations means the loss of jobs for many American workers.

Underline first 7-8 words

Look for

- 1) Underlined abstract nouns as simple subjects
- 2) 6-7 words before get to a verb

Analyse

The outsourcing of high-tech work to Asia by corporations means the loss of jobs for many American workers.

Who are the characters and what are their actions?

Analyse

The outsourcing of high-tech work to Asia by corporations means the loss of jobs for many American workers.

Who are the characters and what are their actions?

Characters: American workers, corporations

Actions: outsourcing, loss

Analyse

The outsourcing of high-tech work to Asia by corporations means the loss of jobs for many American workers.

Who are the characters and what are their actions?

Characters: American workers

Actions: outsourcing, loss

Beware of actions that are nouns instead of verbs (nominalization)

Revise

Many American workers are losing their jobs, because corporations are outsourcing high-tech work to Asia.

Who are the characters and what are their actions?

Characters: American workers, corporations

Actions: outsourcing, loss

Avoid Nominalization

verbs, adjectives -> nouns

Exercise

Do these sentences obey Ramsey's principle #3 (from slide 4)?

Formal verification and program analysis provide methods for making reliable and robust systems, by proving that programs have no errors and thus are correct.

The main idea behind these methods is to consider computer programs as mathematical objects and prove their properties in the same way as we prove theorems in mathematics.

However, even if all scientists in the world start working exclusively on proving program properties, their work will take too long if not infinite time.

Even then, only a tiny subset of implemented computer programs will be covered.

The solution is to delegate the task of proving program properties to special kinds of computer programs proving program properties.

Exercise

This list of words below mixes verbs, adjectives and nominalizations. Which are which? Convert. Write sentences using verbs and adjectives and then using nominalizations, e.g.

I **suggest** that we **discuss** the issue in a **careful** manner

My **suggestion** is that our **discussion** of the issue be done with **care**

analysis believe attempt conclusion evaluate

suggest approach comparison define discuss

expression failure intelligent thorough appearance

decrease improve increase accuracy careful

emphasize explanation description clear examine

Make comments useful

I believe that the most important idea in the paper is the idea of using a finite automaton to model the infinite space of possible signatures.

At the end of paragraph A, I was happy, but but the time I got to sentence 3 of paragraph B, where it says that a machine register has a weight that is equal to the number of resources it consumes, I felt that I no longer understood what was going on.

I don't understand the distinction between an `argument' and a `parameter'.

rather than

The third section is not well written