ICS 139W
Critical Writing
Outline

1. Introductions
2. What this class is about
3. Logistics
4. HW
Me...

Deva Ramanan
Associate Professor
Department of Computer Science
University of California at Irvine
4072 Donald Bren Hall (Office)
3019 Donald Bren Hall (Mailing address)
Irvine, CA 92697-3435
dramanan@ics.uci.edu
949-824-4893 (phone)
949-824-4056 (fax)

Research

Our group works on computer vision, machine learning, and computer graphics, with a focus on statistical methods for analyzing images and video. Our research tends to explore theoretical issues (such as knowledge representation and large-scale learning) that are firmly grounded in concrete applications (such as visual search and video surveillance). Historically, it has been difficult to transfer

And you....?
Overview of class

Is this another boring writing class?

Hope not!
Writing 39B, 39C is supposed to handle the fundamental mechanics :)

This class with higher-level concepts in writing
Question: (When) do you folks write?
Question: (When) do you folks write?

“Social media”

Text messages

Personal webpages

Facebook

Blogs

Video-blogs / YouTube
Social writing/presentations may turn into jobs
Writing in the workplace

Local company that manufactures technology for cancer treatment
Writing in the workplace

1) Update old C-software system to new C++/OO-system.
2) Allow for the current system to be ported to new installation sites around the world.
3) Requires new designs, reading/understanding old code
4) Writing the following documents:
   - Software Requirements Specification (talking to technicians)
   - Software Design Document
   - Functional Specification
   - Test cases.
   - Explaining portion of software to M.D.’s in formal presentation/meeting.
Software Development Cycle

Give document to at least two engineers to proof, meeting with proofing engineers to discuss & sign-off. Done for each stage in the development process. Done several times a week, and sometimes even a day.
Industry advice

Joel on Software
Advice for Computer Science College Students
by Joel Spolsky

1. Learn how to write before graduating.
2. Learn C before graduating.
3. Learn microeconomics before graduating.
4. Don't blow off non-CS classes just because they're boring.
5. Take programming-intensive courses.
6. Stop worrying about all the jobs going to India.
7. No matter what you do, get a good summer internship.

http://www.joelonsoftware.com/articles/CollegeAdvice.html
Learn how to write before graduating.

Would Linux have succeeded if Linus Torvalds hadn't evangelized it? As brilliant a hacker as he is, it was Linus's ability to convey his ideas in written English via email and mailing lists that made Linux attract a worldwide brigade of volunteers.

Even on the small scale, when you look at any programming organization, the programmers with the most power and influence are the ones who can write and speak in English clearly, convincingly, and comfortably. Also it helps to be tall, but you can't do anything about that.

The difference between a tolerable programmer and a great programmer is not how many programming languages they know, and it's not whether they prefer Python or Java. It's whether they can communicate their ideas. By persuading other people, they get leverage. By writing clear comments and technical specs, they let other programmers understand their code, which means other programmers can use and work with their code instead of rewriting it. Absent this, their code is worthless. By writing clear technical documentation for end users, they allow people to figure out what their code is supposed to do, which is the only way those users can see the value in their code. There's a lot of wonderful, useful code buried on sourceforge somewhere that nobody uses because it was created by programmers who don't write very well (or don't write at all), and so nobody knows what they've done and their brilliant code languishes.
I won't hire a programmer unless they can write, and write well, in English. If you can write, wherever you get hired, you'll soon find that you're getting asked to write the specifications and that means you're already leveraging your influence and getting noticed by management.

Most colleges designate certain classes as "writing intensive," meaning, you have to write an awful lot to pass them. Look for those classes and take them! Seek out classes in any field that have weekly or daily written assignments.

Start a journal or weblog. The more you write, the easier it will be, and the easier it is to write, the more you'll write, in a virtuous circle.
My own philosophy

-I will focus on effective techniques for written and oral communication

-Communication is a unbelievably vital skill in industry and academia

-Most technical folks are rather bad at it

-Writing/preparing as an iterative process
Expected outcomes

Principles of good writing

Practices for good writing

Most students dread writing - I hope you learn to enjoy it by the end (it took me several years after becoming faculty)
Some examples

Principles

Write with audience in mind.
Put old information at the beginning of a sentence, and new information at the end.
Use sentences with strong subjects and verbs that refer to “agents” and “actions” you would like to appear in the mind of your reader.

Practices

Write a crappy first draft.
Write in short sessions instead of binge writing.
Sequential writing

“The first principal of composition is to foresee or determine the shape of what is to come and pursue that shape”

Strunk & White

Classic view on writing:

1) Prewrite
2) Outline
3) Draft
4) Revise
5) Edit
Writing as a process

http://en.wikipedia.org/wiki/Writing_process
http://owl.english.purdue.edu/owl/resource/682/01/

Contemporary view on writing:

1) Prewrite
2) Outline
3) Draft
4) Revise
5) Edit

"Teach Writing as a Process Not Product"

Donald M. Murray
“Writing is a way to end up thinking something you couldn’t have started out thinking”

Peter Elbow

I find that its an integral part of research...
Why should you take this class?

Good written and verbal communication skills will allow you to:

- Get a job
- Move up the promotional latter
- Carry out your work
  
  Write memos, document code, e-mails...
- Help you in everyday life :)

Emphasis of class

- Focus on audience-appropriateness
- Organization and clarity
- Logical arguments
- Writing as an iterative process
- Effective PowerPoint presentations
- Effective use of visuals (graphs and plots)
How most students write
How most students write

Binge versus short daily sessions:

Boice (2000) gives startling evidence for the benefit of short, daily writing sessions versus long “binge” sessions.

⭐⭐⭐⭐⭐ Best advice on writing practices I have read. October 27, 2002
By Norman Ramsey
Format: Paperback | Amazon Verified Purchase

Some reviewers have criticized this book for being obvious. I found it anything but. The culture of my field says that the way to write a paper is to set aside large, uninterrupted blocks of time. It was an eye-opening experience to see hard data that show it is more effective to write in brief daily sessions. These writers are roughly twice as productive by several measures (pages written, manuscripts published) and also report themselves to be happier. This idea changed my professional life.
My own experiences

**Written communication**

- Much of what I do (day-to-day) is write
- Write proposals, papers
- Research log/notes

**Verbal communication**

- Successful academics tend to be dynamic speakers
- But vast majority of conference talks are poor
My challenge

How does one teach writing?

... to a technical audience?
The Three Laws of Professional Communication

—Feature by
JEAN-LUC DOUMONT,
SENIOR MEMBER, IEEE

Index Terms—Asimov, audience, laws, noise, principles, redundancy, robots, signal.

Fantasy stories, whether magic tales, science fiction, or others, are often strikingly inconsistent: wizards, aliens, and other constituents to explain complex phenomena is, of course, at the heart of science: physical chemists have established...
The Three Laws of Professional Communication

Interface

Index Terms—Asimov, audience, laws, noise, principles, redundancy, robots, signal.

—Feature by
JEAN-LUC DOUMONT,
SENIOR MEMBER, IEEE

Fantasy stories, whether magic tales, science fiction, or others, are often strikingly inconsistent: wizards, aliens, and other constituents to explain complex phenomena is, of course, at the heart of science: physical chemists have established

Premise:

1. Professional communication is about “getting the message across”

2. We want our audience to pay attention to, understand, and act upon a maximum of messages given constraints
First law
Adapt to your audience.

The burden is on us, not the audience
Many teachers fail to realize this!
Eliminate unnecessary “fluff”

Number one complaint from previous TAs

http://phoenix.ics.uci.edu/teaching/ics139w_spring12/grading.html
Tell your audience what you're going to tell them. Tell them. Then tell them what you told them.

“signpost paragraphs”
How does one become a good writer?

It's hard to enumerate principles of writing. It's easier to evaluate good vs bad writing.
Writing as hypothesis testing

Independent variable: a text.
Dependent variable: a reader’s reaction.

After suggesting a particular kind of change in a text, evaluate whether the corresponding change in the mind of the reader is an improvement. If so, this is experimental evidence in favor of the change—a persuasive argument for changing one’s writing.
This is not a lecture-based class...

1) Practice

You will do a lot of writing and presentations in this class

2) Critique others

You will do a lot of peer review
(of both writing and presentations)

It is important that you attend lecture
(Audience participation grade 10% of grade)
Outline

1. Introductions
2. What this class is about
3. Logistics
4. HW
Main writing assignments

http://www.ics.uci.edu/~dramanan/teaching/ics139w_spring14/

- Five main writing assignments, each with multiple parts:
  - "Statement" (3-4 pages, 15%)
  - "Wikipedia" (3-5 pages, 20%)
  - "System: Pitch" (6-7 pages, 15%)
  - "System: Tutorial" (3-4 pages, 15%)
  - "Resume and Cover Letter" (2 pages, 10%)
- Two oral presentations:
  - "System: Pitch" (2 minutes + slides, 5%)
  - "System: Tutorial" (5 minutes + slides, 10%)
- The remaining 10% will be in-class peer editing and in-class participation, including e-mail correspondence. There is no way to make up a missed session as an editor. Note that e-mails are also considered a form of participation, and so will be used to determine this grade.

(pages refer to standard, double-spaced page)
Grading

We will be very strict when grading mechanical errors!

We expect spelling and grammar and basic sentence construction to be correct.

We will instead focus on grading context
(which is admittedly subjective)
## Grading Rubrics

<table>
<thead>
<tr>
<th></th>
<th>Excellent</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Critical Thinking/Analysis</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Evidence/Research</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Development &amp; Structure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Written mechanics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(An example entry guideline)

**Excellent critical thinking / analysis:** The approach to the assigned topic of study is insightful, and/or creative, persuasive, unique, and worth developing; the level of thinking/analysis is strong; the ideas are clearly communicated with focus and specificity; the topic is considered/addressed from several facets or perspectives; the writer understands discipline-specific methods for producing knowledge; the content is tailored to the disciplinary audience.
Plagiarism

Plagiarism means presenting somebody else's work as if it's your own. You may use whatever outside sources (books, friends, interviews, periodicals) are appropriate for an assignment, so long as you cite them (that is, so long as you indicate the source of anything you didn't think up and write yourself).

We will randomly pass assignments through automated detectors (such as TurnItIn) searching for matches across a large database of online material.

Plagiarism is academically dishonest and unfair to your fellow classmates. We will process violations to the fullest extent possible under the UCI Academic Senate policy.

We have found such violations in the past - please don’t put us in this awkward position!
A general writing reference such as *The Little Penguin Handbook* by Lester Faigley (this is the reference typically used in lower division classes).

*The Elements of Style* by Strunk and White, a classic concise reference available online.
Fantastic resource for high-level writing (how to start writing an outline?) and low-level mechanics (what’s a past participle?)
Other optional texts

- *The Mayfield Handbook of Technical and Scientific Writing* by L. C. Perelman, J. Paradis, and E. Barrett. This technical writing guide is available both in printed form and a free online version.

- *The MIT Guide to Science and Engineering Communication* by James Paradis and Muriel Zimmerman. This brief guide describes the various forms of scientific and technical writing, including sections on oral presentations and document design.

- *Visual & Statistical Thinking: Displays of Evidence for Decision Making* by Edward Tufte. This reprint of Chapter 2 of Tufte's book, Visual Explanations, describes two situations where the way information was presented had life-or-death consequences.

- *The Cognitive Style of PowerPoint* by Edward Tufte. Tufte presents evidence that "PowerPoint, compared to other common presentation tools, reduces the analytical quality of serious presentations of evidence."
Submission instructions

1) Submitted drafts should not be your first-draft (which should be crappy). Take advantage of peer review and feedback.

2) You must turn in both a stapled hard copy (in-class) and pdf e-copy (to EEE). (5% penalty if you only turn in one)

3) Double space all submissions to allow for grading/marking

4) Late policy: you will be docked 10% per day late

5) Re-read submission instructions on web-page
   
   \text{http://phoenix.ics.uci.edu/teaching/ics139w_spring12/requirements.html}
Discussion sessions

Will be treated as TA consultation hours
Use it to get direct feedback (best way to learn writing!)
Other logistics

http://www.ics.uci.edu/~dramanan/teaching/ics139w_winter13/
Hints for success

This class will be a lot of work (similar to a project class)

- Multiple assignments will be overlapping throughout the quarter
- Be aware of schedule and due dates
  http://phoenix.ics.uci.edu/teaching/ics139w_spring13/schedule.html

Find a good, reliable printer and stapler

Hints from long-time TAs

http://phoenix.ics.uci.edu/teaching/ics139w_spring13/grading.html

- Proofread/edit to remove mechanical writing errors
- Avoid padding with extra words/sentences to get to minimal length
In-class writing sample

Next Tuesday, there will be a pass/fail in-class writing sample

Bring a pen, scrap paper, and any references you like (dictionary, lower-division writing guides, etc.)

Write neatly!

You are required to pass to take this course
HW

Read advice for college students:
http://www.joelonsoftware.com/articles/CollegeAdvice.html

Read description of Systems: Tutorial and System: Pitch assignments and start thinking of topics (must decide by beginning of next week)