CS 115: Academic Writing in Computer Science

Fall 2023

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Research Professor in Computer Science

Plan for Today

- Introduction to course including syllabus
- Icebreaker exercise
- Introduction to Summary and Analysis Essays
- Assignment of readings for next week’s class

Course Genesis

- BU Writing Program reached out to several STEM (Science, Technology, Engineering and Mathematics) departments, asking if they would be interested in developing discipline-specific courses meeting the HUB “writing intensive” requirement.

  Writing-intensive (WIN) courses enable students to build on and practice skills learned in the First-Year Writing Seminar and, in some instances, of Writing, Research & Inquiry.

- Computer Science was one of these departments, and the result is this course, allowing CS majors to meet the writing intensive HUB requirement while staying within the CS discipline.
  - Co-designed with Dr. Rebecca Kinraide of the BU Writing Program.

Course Information

- Instructor: Alley Stoughton
- Email: stough@bu.edu
- Personal Website: alleystoughton.us
- Course Website: alleystoughton.us/cs115
- Class Sessions:
  - A1: Friday 10:10am-11:55am SAR 104
  - B1: Friday 12:20pm-2:05pm SAR 104
- Office Hours: Friday 3-5pm CDS 1013 and by appointment
- Course Piazza: piazza.com/bu/fall2023/cs115

Official BU Description

Pre-req: WR 120 or equivalent, CS 111. This 2-credit course offers a Writing Intensive unit through the topic of computer science. Students engage with readings and discussions in current computer science issues. The course focuses on teaching critical reading, creating a strong argument, and engaging with a variety of sources. Effective Spring 2023, this course fulfills a single unit in the following BU Hub area: Writing-Intensive Course.

Effective Communication

- Effective communication is an essential skill for computer scientists.
- Whether we design user interfaces, write code, train machine learning algorithms, or carry out basic or applied research, we will be less successful if we are unable to effectively communicate with others in writing and orally.
- Good use of grammar and logical structure in written and oral communication — and spelling and punctuation in written communication — help us communicate more effectively.

CS Writing Genres and this Course

- There are number of kinds or genres of writing in computer science, including:
  - technical writing (e.g., about software or hardware);
  - writing mathematical proofs; and
  - writing research articles for publication.
- Some would be poor vehicles for this course, due to students having different backgrounds.
- Our solution: focus on articles about computing that are intended for a general audience — of computer scientists, or including the public at large.

Our Focus

- We will restrict our attention to topics in computing with relevance to society.
- This will not only encourage engaging writing, but it will also position students, in their future careers, to be able to effectively communicate with colleagues and the general public about the impact of computing on society.
  - Because the general public is often poorly informed about such topics, we computer scientists have a crucial professional role to play in shaping the public discourse on computing and society.

Three Course Phases and Kinds of Writing

I. Summary and Analysis Essays

II. Major Paper

III. Op-Ed

I: Summary and Analysis Essays

- At the beginning of the semester, you will read two short, technically informed, but not technically deep articles from the computer science journal *Communications of the ACM*, and write short essays about them.
- These essays will begin with a succinct **summary** of the article, and will then transition to an **analysis** of that article.
- In these analyses, the focus will be on content as opposed to style: what did the article get right?, and what could it have gotten better?

II: Major Paper

- In the middle and majority of the semester, you will be preparing for writing and writing your major paper.
- It will state a **“contestable thesis”** regarding a topic of computer science with relevance to society, and will then attempt to persuade the reader that the thesis is valid.
  - The paper will take a clear position on an issue, rather than just surveying all sides of the issue.

II: Major Paper

- Three **"scaffolding exercises"** will prepare you for writing your paper:
  - giving a short **class presentation** on the proposed topic of the paper, introducing the issue on which the paper will take a position;
  - developing an **annotated bibliography** including a draft thesis statement; and
  - developing a **"storyboard"** consisting of a thesis statement, plus a sequence of slides: single claim / supporting evidence for that claim / how that claim and its evidence relate to the larger thesis.
- Next, you will write a **draft** of your paper, and receive feedback on it (including peer feedback).
- And finally, you will take this feedback into account while producing the **final version** of your paper.

II: Major Paper

- Start thinking soon about what your paper's **general topic** will be.
- Think about what you'd like to present in your **class presentation**.
- Think about what your **contestable thesis** might be.
  - Last semester students wrote about the "crypto wars": whether there is safe way of giving law enforcement access to private encrypted information.
    - Some students argued that there are cutting edge technical solutions that can achieve this without sacrificing security or privacy.
    - Some students argued that there will never be a safe way of allowing such access, and that the government cannot be trusted with sensitive information.

III: Op-Ed

- In the final weeks of the semester, you will read several newspaper **“op-eds” or opinion pieces** on **topics of computing with relevance to society**.
- You will then write an op-ed of your own.

LaTeX Document Preparation System

- Early in the course you will learn to prepare documents using the **LaTeX document preparation system**, which is how almost all scholarly CS articles are written and typeset.
  - Separates the structure of a document from how it is formatted.
  - Includes support for bibliographic citations, and cross referencing.
  - Documents are formatted with reference to a *document style*, controlling fonts, page margins, bibliographic citation styles, etc.

Seminar Format and Class Participation

- Course is a seminar: class discussions and group exercises.
- Bring your laptop to every class: some group and individual exercises will require having it.
  - But focus your attention on whoever is speaking, instead of laptop or phone.
- Each student will be giving a short presentation to the class.
- Class participation part of your course grade. Posts on Piazza count.
- Use form every week for reporting your recent class participation (link under “General Resources” on Piazza).
- You will also be assessed on the quality of your peer feedback on 2-3 major paper drafts.

Office Hours, Piazza, BU Library, Educational Resource Center and Gradescope

- Office hours on Fridays from 3-5pm in CDS 1013. Or by appointment, in person or on Zoom.
- Using Piazza for announcements, online discussion and the posting of material that is not publicly released. Visit piazza.com/bu/fall2023/cs115 to join in. Both sections of the course will share this single Piazza course.
- You can access many publications online via the BU Library.
- For additional help with your writing, you can make an appointment with a writing fellow at BU's Educational Resource Center.
- You will be submitting solutions to assignments via Gradescope. I will post the entry code on Piazza.

Assignments and Assessment

- Each assessment unit in this course will be graded as one of:
  - **no credit (0 points)**: no work submitted or D or worse work;
  - **check-minus (1 point)**: failed to meet expectations for B+ work, but met expectations for C work;
  - **check (2 points)**: met expectations for B+ work;
  - **check-plus (3 points)**: exceeded expectations for B+ work.
- Late submissions will be penalized by one point, during the first twenty four hours. After that, submissions will not be accepted.
- If you have extenuating circumstances that will prevent you from submitting your work on time, you should let me know in advance.

Assessment Units

- Summary and Analysis Essay 1: 1
- Summary and Analysis Essay 2: 1
- Class Presentation for Major Paper: 1
- Annotated Bibliography for Major Paper: 1
- Storyboard for Major Paper: 1
- Draft of Major Paper: 1
- Peer Feedback on Major Paper Drafts: 1
- Final Version of Major Paper: 3
- Op-Ed: 1
- Class Participation: 2

Scaling

with scale of 2 or 3 intermediate points possible

Final Grades

- 0-9: F
- 10: D
- 11-12: C
- 13-15: C+
- 16-18: B-
- 19-23: B
- 24-28: B+
- 29-33: A-
- 34-39: A

I reserve the right to push grades up a few points by weighting class participation more heavily —- but I won't push grades down

Citing Sources, ChatGPT and Academic Integrity

- When you are relying on a source (published article or book, website, blog post, etc.) for information, ideas or authority, you must explicitly cite it.
- In your summary and analysis essays, you may use whatever citation style you like; but in your major paper written in LaTeX, you'll be using a set citation style.
- When you use sentences or memorable phrases from a source verbatim (word for word), you must use quotation marks.
- Otherwise, you must express the material from the source in your own words; this is called “paraphrasing".
- It is not acceptable to paraphrase sentence by sentence though part of a source, and it is also not acceptable to extensively quote from a source.
- Instead, take careful notes (which should include any verbatim quotations), put the source aside, and then express the necessary ideas in your own words. You should then go back to the source and check that you are being faithful to it.

Citing Sources, ChatGPT and Academic Integrity

- I understand that you may want to use ChatGPT or similar generative AI tools to help you with your writing.
- Doing this as a way of coming up with ideas is fine, although you should keep in mind that the information generated by ChatGPT is often incorrect.
- But please don't use such tools to generate text that you include in your essays.
  - Doing so will impede the development of your writing skills, including the development of your personal voice.
  - ChatGPT essentially plagiarizes the articles it is trained on, and so by using its text you are essentially plagiarizing these original sources, while having little idea what sources those are.

Citing Sources, ChatGPT and Academic Integrity

- You are responsible for reading and understanding BU's Academic Conduct Code:

  www.bu.edu/academics/policies/academic-conduct-code

- Incidents of academic misconduct will be reported to the Academic Conduct Committee (ACC). If the ACC finds a student guilty, punishment could range from a minimum of a grading sanction (e.g., dropping your final grade by one letter grade) all the way up to suspension or expulsion from the University.

Icebreaker

- Pair off and ask each other the following questions, record the answers, and then introduce your partner to the class:
  - Name
  - Where are you from and where are you living at BU?
  - Plans after graduation / What do you want to be when you grow up?
  - Favorite restaurant in Boston
  - Favorite hobby
  - Find three things that you have in common but have nothing to do with BU.

Summary and Analysis Essays

- Our Summary and Analysis Essays will be 400-600 words long, with separate summary and analysis sections —- first the summary, then the analysis
  - Their subjects will be short articles from *Communications of the ACM*.
  - First read the article, taking careful notes.
  - When you begin writing, put the article aside.
  - In the summary, concisely state the key points of the article.
  - In the analysis, explain the relevance or significance of the article, emphasizing content not style.
  - After writing your draft, go back to the article to check the details.

Summary and Analysis Essays: Summary

- A summary should be:
  - **Comprehensive** — include major points necessary to understand essay.
  - **Self-contained** — understandable even by someone who hasn't read the article.
  - **Concise** — stick to the main ideas and don't include unnecessary details.
  - **Accurate** — make sure you understand the essay and are describing it correctly.
  - **Objective** — don't include ideas or analysis of your own.
  - **Original** — use your own words and phrasing and avoid using quotes.

Summary and Analysis Essays: Summary

- Introduce the essay with the full title and author's name. E.g.,

  In her article "Addressing Algorithmic Discrimination" from *Communications of the ACM*, Pauline T. Kim explains how algorithms can be discriminatory, even when this wasn't their creators' intent.

- Subsequently refer to the author by his, her or their last name or using third person pronouns (he, she, they, …).
- Keep your verbs in the present tense when referring to things the author of the text says, does, writes or thinks in the essay.
  - Use other tenses as needed, e.g., past tense for talking about historical events.

Summary and Analysis Essays: Analysis

- In the analysis, you should explain the relevance or significance of the article.
- Emphasize content not style — what did the article get right, what did it get wrong.
  - In particular, apply your computer science knowledge in your analysis.
- Bring in other sources or examples to support your arguments.
- Even if you disagree with the author, be thoughtful and respectful in your criticism.

Reading Assignments for Next Week

- For next week, read (see Resources on Piazza) and be prepared to discuss:
  - Logan Kugler's *Communications of the ACM* article, "Being Recognized Everywhere".
  - The two sample, anonymous summary and analysis essays about Kugler's article.
  - Katrina Ligett and Kobbi Nissim's *Communications of the ACM* article, "We Need to Focus on How Our Data Is Used, Not Just How It Is Shared".

Questions?