3-Page Funding Proposal

ECE398PSC Fall 2016
3-page proposal content

• One proposal per group

• Must include:
  • Abstract
  • Project Description
  • Team
  • The “Ask”
  • Budget
  • Timeline
  • Long-term implications

• Grading will include technical writing
Abstract (aka executive summary)

• Short
  • 200 words is good. LESS than 400.

• Self contained
  • Describe the entire proposal, not just the introduction or the results.

• Exciting
  • Often, we only read the title of a report...if the title is good then we will read the abstract....if the abstract is REALLY good...may read the report.

• Concise
  • Wordiness can really take away from the quality of an abstract. Use simple and direct language.
Abstract (aka executive summary)

• Generally one paragraph.

• I like to start off with a sentence that summarizes everything you have done.

• Rest of the abstract should follow your report
  • Problem
  • Solution
  • Method
  • Results
  • Implications

• Each section should logically connect to the next.
Revising your abstract

• Correct your logic first.

• Check content:
  • Did you included everything you need?
  • Eliminate everything you didn’t?

• Is your language precise?

• Can you be more concise?

• Triple check for errors?

https://owl.english.purdue.edu/owl/resource/656/1/
Example Scientific Abstract

An SSVEP-Based Brain-Computer Interface for Text Spelling with Adaptive Queries that Maximize Information Gain Rates

This paper presents a brain-computer interface for text entry using steady-state visually evoked potentials (SSVEP). Like other SSVEP-based spellers, ours identifies the desired input character by posing questions (or queries) to users through a visual interface. Each query defines a mapping from possible characters to steady-state stimuli. The user responds by attending to one of these stimuli. Unlike other SSVEP-based spellers, ours chooses from a much larger pool of possible queries—on the order of ten thousand instead of ten. The larger query pool allows our speller to adapt more effectively to the inherent structure of what is being typed and to the input performance of the user, both of which make certain queries provide more information than others. In particular, our speller chooses queries from this pool that maximize the amount of information to be received per unit of time, a measure of mutual information that we call information gain rate. To validate our interface, we compared it with two other state-of-the-art SSVEP-based spellers, which were re-implemented to use the same input mechanism. Results showed that our interface, with the larger query pool, allowed users to spell multiple-word texts nearly twice as fast as they could with the compared spellers.
“The Ask”

• Let’s make this very basic for now.
• One short paragraph of what you will need to be successful.
• One short paragraph of justification.
Improving our technical writing

• The quality of your technical writing has an impact on your credibility.

• Encourage you to work on a few specific aspects of your writing.

  • Quantities
    • Expressed with a number
    • Include unit
    • Space between number and unit
Improving our technical writing

• Abbreviations
  • Defined at first use
  • Used consistently thereafter
  • Example: data acquisition unit (DAQ)
Improving our technical writing

• Concision
  • Eliminate unnecessary words
  • Examples:
    • Smith College, which was founded in 1871, is the premier all-women's college in the United States.
    • Founded in 1871, Smith College is the premier all-women's college in the United States.
    • There are twenty-five students who have already expressed a desire to attend the program next summer. It is they and their parents who stand to gain the most by the government grant.
    • Twenty-five students have already expressed a desire to attend the program next summer. They and their parents stand to gain the most by the government grant.

• More examples and details at:
  http://grammar.ccc.commnet.edu/grammar/concise.htm
Improving our technical writing

• Readability
  • Does your writing make sense? How can you make it easier to read?
• Tips:
  • Use simple words
  • Be concise
  • Connect your sentences
  • Use active voice
    • Passive: The brakes were slammed on by her as the car sped down the hill.
    • Action performed on the subject.
    • Active: She slammed on the brakes.
    • Subject performs the action
  • Man more suggestions at:

https://owl.english.purdue.edu/owl/resource/539/02/
Improving our technical writing

- Figures/Tables/Equations
  - Label them!
  - Use fonts that are large enough to read!
  - Add captions.
  - Reference them properly in the text.
    - ....which can be seen in Figure 1.
Improving our technical writing

• References in IEEE format.

• Basic format for journals:

• Should be referenced in text with square brackets.
  • Ex: Thus, Bill and Ted proved that adventures are excellent [1].

• Guide can be found at:
  • https://www.ieee.org/documents/ieeecitationref.pdf