Writing a Successful Statement of Purpose

U CHICAGO US-NIGERIA PHD VIRTUAL WORKSHOP

October 31, 2020
What makes a good Statement of Purpose?

- Length?
  - Just how long is too long: 1 page? 2?

- How much should you elaborate?

- Tone: formal vs friendly?
  - Should it read like a novel or like a newspaper op-ed?

- Past Experiences vs. Future Interests?
Who is your Audience?

✓ Professors/Faculty

✓ Expert(s) in your field

✓ Will be reading scores to 100’s of essays.

✓ May be your future advisors.
What do your readers want?
What the readers want to see…

It's all about convincing them of your RESEARCH POTENTIAL

- That you can communicate ideas and research/project work, to academic colleagues.
- That you can see projects through.
- That you appreciate the bigger questions and impact. i.e.
  
  “Why I did XYZ?” and not just “What I did was XYZ”.

- Your research interests and long term goals. And that they fit with interests of the program’s Faculty.

- That you have some baseline skills required for research in your area.
  e.g. A competitive applicant to a fabrication/synthesis lab should at least be able to work with lab apparatus or tools.

- Other useful traits:
  - Collaborating / working with others, yet ability to work independently.
  - Diligence.
  - Creativity.

Essentially, they want to know that you will be a productive researcher who aligns with the program.
Structuring the Statement of Purpose
Statement of Purpose Structure

- Personal Recommendation:
  - the UC Berkeley Grad Division’s structure (others may disagree)
  - [https://grad.berkeley.edu/admissions/apply/statement-purpose/](https://grad.berkeley.edu/admissions/apply/statement-purpose/)

- It divides the SoP into four sections:
  - Introduction of applicant/interests and motivation.
  - Summary of undergraduate and previous career.
  - Relevance of recent and current activities.
  - Elaboration on academic interests in grad school.
1. Introduction/Motivation

- What motivated you to apply?

- Don’t spend too long figuring out perfect “hook”. Berkeley recommends “short and to the point. No autobiographies”\(^1\).

- **Clarity:** Your research/academic interests should also be clear to the reader just from this paragraph.

- **Specificity:** Think of motivation in terms of specific research area rather than why your degree. E.g. Why "metal organic frameworks" instead of Why “chemistry”?  

- **Why specific area?** An intro might be one informed by your perceptions of your field and the world as an undergraduate/recent years, rather than your motivation as a naïve 10 year old child.

\(^1\) [https://grad.berkeley.edu/admissions/apply/statement-purpose/](https://grad.berkeley.edu/admissions/apply/statement-purpose/)
1. Introduction/Motivation

- **Why this area? Why now?**
  - Perhaps how would it help you solve some ubiquitous societal problem.
  - You’ve had previous/current education in this area, but undergrad education can only give you so much.

- **Understand the tradition in your discipline:**
  e.g. Humanities programs tend to expect a lot more wordsmithing relative to engineering programs.

- **Cohesion.**

- Don’t necessarily need to find a single “Aha moment” as your motivation.

  2 [https://ls.berkeley.edu/academic-programs/arts-humanities/graduate-diversity-office/prospective-students/stateme](https://ls.berkeley.edu/academic-programs/arts-humanities/graduate-diversity-office/prospective-students/statement-purpose)
1. Introduction/Motivation Samples

Very short and direct.

“My plans for a Ph.D. in EECS at the Georgia Institute of Technology are centered on the development of novel, multimodal, multiscale data fusion techniques and the application to XYZ. A number of specific experiences in research and work have informed this decision to undertake this advanced research degree.”
Nigeria’s electric power sector is in a dismal state. The grid infrastructure is ageing and the severely limited grid capacity results in frequent blackouts. Barely 47% of over 170 million people in Nigeria have access to electricity. As I write this, I am inundated by the noise from the gasoline generators of my neighbors who, like thousands of households and businesses in Nigeria, are forced to turn to these expensive alternatives for electricity. Since building new power plants and expanding grid infrastructure cannot happen fast enough, solutions such as introducing distributed generation and implementing demand response programs have to be considered in order to meet demand. However, these require the development and implementation of robust energy systems which incorporate smart grid infrastructure.

I have been captivated by this idea right from my first year at XYZ University and this has led me to seek out opportunities for research and technical development in energy systems during my undergraduate program. I started with simple questions; “how can consumers save on electricity cost and consumption?”, “how can smart hybrid energy systems be designed to meet the electricity needs of my local community?”, “how do we incorporate sustainability in our present energy mix?” Investigating each question opened up even more interesting questions on the complexities in the analysis and design of the cyber physical infrastructure needed to achieve these objectives and the ensuing policy implications. It is this exposure to research and the fascination of multifaceted big idea questions that have helped crystallize my interest in an advanced research program in ECE focusing on energy systems at ABC university.
1. Introduction/Motivation Samples

My research interests for PhD studies in Operations Research at ABC university are motivated by challenges raised by recent trends in complex systems; those associated with the proliferation of data and the increased coupling of these systems with human behavior, as we develop optimization and control algorithms for scalable, coordinated operations management. In particular, I would like to focus on the integration of machine learning with traditional stochastic modeling and network theory to better advance our understanding and mitigation of cascading failures and risk propagation in these systems.
2. Undergraduate / Previous career summary

- How did your previous education and work experience help shape your interests and readiness for grad school?

- **SHOW, DON'T TELL** by focusing on relevant projects and experiences.

- **PRIORITIZE** your stories. Start with your strongest and most relevant research or project experience e.g. your final year project if relevant. Sometimes what you consider your best work may be completely irrelevant and a waste of precious space.

- **COHESION**: Think about the flow of the essay. Each paragraph should connect with the paragraph preceding and succeeding it. Consider one paragraph per 'point' or 'story'.

- For each paragraph, the objective is not only just to describe the experience in and of itself, but also to discuss **HOW IT HAS PREPARED YOU FOR YOUR GRAD SCHOOL GOALS**.

- Depending on how many experiences you have/want to share, you may need 1-3 paragraphs for this.

1 https://grad.berkeley.edu/admissions/apply/statement-purpose/
2. Summary of undergraduate and previous career

- I like to take a four-pronged approach to describing projects/past career. This is a modification of the so-called “STAR” framework\(^3\).
  
  - **S: Situation.** Introduce the project. What motivated the project/what problem were you trying to solve?
  
  - **T: Task.** What was required of you? Responsibilities.
  
  - **A: Action:** What did you do? Methodologies. Challenges.
  
  - **R: Results/Reflection.** What were your key results. Insights/broader impact to your field/to the world. The impact to yourself/your understanding of the problem. Skills you gained and how they would help you in graduate school. If so, how it relates to your current grad school interests.
  
- Also, ensure the paragraph flows with the rest of the essay as a cohesive narrative.

- Relevant internships and extracurriculars also count.

\(^3\) [https://en.wikipedia.org/wiki/Situation,_task,_action,_result](https://en.wikipedia.org/wiki/Situation,_task,_action,_result)
3. Recent & Current Activities

- Similarly styled paragraphs as with other paragraphs summarizing your undergraduate / previous work, but focusing on what you do now/recently.

- Emphasize any related activities to your grad school work e.g. personal projects, MOOCs you’ve been taking, etc.

- Remember to also be reflective. How have these activities helped you to see things differently? Are there new challenges that you now see by engaging in them? Perhaps new questions on your mind that you would like to have addressed in grad school?

- Be positive, enthusiastic and use the active voice.

- Depending on how much you have to share, this should be 1 to 2 paragraphs.
4. Academic Interests

- Ideally, this should be very well developed; at least 2 paragraphs.

- Probably the most important, but often tends to be poorly developed. If you have to reduce your introductory paragraph to strengthen this section, please do.

- Talk about what you would like to study/research with as much detail as you can.

- Use technical language of discipline, remember your audience.

- Be positive, enthusiastic and use the active voice.

- Consider mentioning potential research questions that you’re interested in exploring as a grad student.

- Why that program and not another university?
4. Academic Interests sample paragraph

In addition to the challenges associated with utility decision making given the recent proliferation of distributed renewable energy resources, I am also particularly attracted to the vast research opportunities for addressing engineering problems associated with the power grid in light of increased penetration and interconnection of electric vehicles and their associated opportunities for emissions reduction. At 28%, the transportation sector is now the largest source of Greenhouse Gases (GHG) emissions in the United States [1]. The design and inferencing problems for grid resiliency highlighted above are just a few challenges which arise as a result of these trends; additional complex decision-making is needed in both the utility and demand-side. For example, there are important issues in terms of load management & control as well as system planning which remain unsolved. Can we better incorporate machine learning in our approaches to demand response? How can we design optimal coordinated charging systems to mitigate congestion in the grid as electrical vehicles participate in DSM programs? Addressing these types of questions will likely involve the integration of a variety of research tools and knowledge from numerical simulation and modeling to inferencing and I am very enthusiastic at the opportunities that the ABC university provides for research and collaboration.
Common Mistakes/Things to avoid

- Preaching to the Choir at the expense of stating your objectives.
  - Spending many words defining and explaining standard concepts in your field at the expense of emphasizing what you did or ideas and questions you have.

- Disjointed paragraphs. No overall theme.
  - Don’t merely rewrite your life’s works/CV.
  - Not every project may be relevant, some might be distracting.
  - Even when relevant, the narrative should flow.
Common Mistakes/Things to avoid

- Forgetting the “P” in SoP. i.e. Spending too much time and space talking about your past experiences and little to none about your future interests in grad school.
  - Talking novel research ideas you have, however rough, is always fantastic!
  - On potential advisors, don’t just write a cursorily-written paragraph rehashing professor names and wrap up. In my opinion, this is the most important part.

- Plagiarism.

- Merely rephrasing the professors interests from the website as your interest.
Final Tips

▪ Don't be afraid to rewrite as many times as possible. Or even start from scratch.

▪ Get feedback from as many people as you can.
  - Especially people not afraid to point out avenues for improvement.
  - Be open to constructive criticism.

▪ If there’s some aspect of your application that’s a potential red flag/question mark, your statement might be a great avenue to address this (concisely).
Final Tips

- Don’t worry too much in the beginning about writing the perfect introduction.
- Don’t bad mouth your previous/current education. It does you no good.
- Talk well about things that can be corroborated by your recommenders.
- Make sure your statement is customized to each program.
- Sometimes, to inform your writing process, it’s good to think about what one-liner take away you want the reader to have about you and whether your writing has reflected this. E.g. You may want to be remembered as “that Nigerian applicant who’s really excited about Metal Organic Frameworks?”
- Re-read to make sure you’re not mentioning the wrong school/professor in the statement.
Thank you! Questions?