Sharing of ORF Scheme

Siyu Kong
Feb.3 2021
Outlines

01 Preparation

02 Research Experience

03 Conclusion
01 Preparation
Participate in Undergraduate Research Program

i). Approach Professor individually

1. Apply for them (online form + recommendation letter)
2. After being accepted, you are asked to find a supervisor in the particular faculties of the host university
3. You and professor settled down the research topic

ii). Research topic and supervisor are settled from the beginning

1. Topic and supervisor are settled down
2. Apply for the one which interests you (online form + recommendation letter)
3. Team work
How To Find Supervisor

01 Participate in Undergraduate Research Program

02 Approach Professor during exchange programme

Pros of method 1:
- Relatively easy to find supervisor
- More official, there are scheduled meeting and final report
- Teamwork, communication

Cons of method 1:
- Topics may be fixed (for 2nd case), less flexible
- DDL may be close (a lot of them are due in January)

03 Approach Professor through email
Proposal

Know where to go in research

1. Problem background
2. Introduction (What is the Research Problem)
3. Methodology (e.g. Mathematics: Analysis? Numerical Method? What are the potential tools?)
4. Some planning (e.g. xx weeks of reading/learning + xx weeks of researching)
02 Research Experience TWO
In this research, we studied stability of helical equilibria elastic rod in general curved space (in sphere/hyperboloid and so on).

We want to give some rigorous optimum solution of control parameters of the helices, in which we model the problem in mathematical language including matrices, algebra and differential equations.

Related to applications such as material science, engineering control.

My research area: optimal control problem

My research?

Analysis

Numerical + Geometry

Engineering application

Undergraduate Research Program SPUR offered by Cornell University
Three kinds of meetings:
- Subgroup
- Optimal control group
- SPUR + REU (PDE group)

Group Meeting

Final Presentation
- Listen to over 10 research reports

Debug & Calculation & Report

Some Valuable Memories
Conclusion & Thank you