Main Essays

SROP is intended to create educational access for students with diverse experiences and perspectives. Please describe your personal and academic goals. What is your motivation for seeking a research experience? How can SROP help you advance toward your goals? Tell us about any relevant extra-curricular activities or recognition of your achievements. 250 Words

I believe that the ultimate goal of research is to make a positive impact on society. This motivates me to pursue a PhD in Economics and Computation (EC) following my Undergraduate degree. Specifically, I hope to research randomized approximation algorithms and fair division.

This has motivated me to research Human Computer Interaction and Computational Geometry throughout my undergraduate degree. Additionally, I founded the UT Dallas EC Club, and taught other undergraduate students Fair Division and Social Choice. This has helped me develop leadership and communication skills as a teacher. I have additionally participated in competitive programming, participating in ICPC SCUSA and the Meta Hacker Cup. These have helped me develop research skills and algorithmic thinking.

Working with EC researchers through SROP will be an excellent opportunity to help me prepare for a successful research career in this space. I look forward to interacting and learning from experts, and establishing connections that will help goals.

Describe the research areas that interest you. Your statement should be specific but not too narrow in focus. Why is this area of research important to you? If you have prior research experience, describe the project and your role. What was the problem and what methodology did you use? What was your role and your key responsibilities? 250 Words

When I first began my undergraduate degree, I researched efficient text entry in VR and AR, and co-authored two papers under Professor Jin-Ryong Kim. Designing efficient, practical, and acceptable text entry systems in virtual reality suffers from many mobility and perceptual constraints, and has merited significant research in the past two decades. In our first paper, we studied perceptual issues in the near field, and proposed strategies to reduce inaccuracy and increase performance in such environments. In the second paper, we addressed mobility and efficiency in AR typing by enabling text-entry on everyday objects. I was responsible for designing and conducting experiments, analyzing data, contributing to the manuscript. This gave me an opportunity to propose future research directions.

Although I enjoyed HCI, I decided to focus toward algorithms. I enjoy algorithmic problem solving and competitive programming, and wanted to work on useful problems utilizing these skills. This drew me to Economics and Computation, which I found to be both theoretically interesting and to have widespread societal applications. I began an independent study with Professor Emily Fox at UTD to study this, ultimately writing a survey of discrete fair division. This gave me an opportunity to understand discrete mathematics at a deeper level.

Currently, I am researching approximation algorithms, advised by Professor Fox, and intend to continue researching theoretical computer science. Studying theory has been a deeply enriching experience, and I have loved learning about and pushing the frontiers of knowledge. I hope to continue this by studying algorithms via the SROP program, and eventually pursuing my Ph.D in algorithms.

Why

Why Purdue- 50 Words
Branzei

Why UIUC- 50 Words
Bhaskar Chaudhury

Why UMich
Grant Schoenbeck

Why UWM
Manolis Vlatakis

I am confident that I would be a good fit at **X** and can learn and make strong contribution there. I am especially interested in researching with **Prof x, Prof y, and Prof z** on EFX approximation. I am quite interested in **Prof X**'s research on **A** and want to work on improving the **K** to **G**. I look forward to the opportunity to push the boundaries of research and to teach as a graduate student at **X**.