

Student Conferenceship Narrative

My name is Efrén López, I am a third year PhD Computer Science student at Texas A&M University–Corpus Christi. I've been interested in information security since my undergrad where I participated in network security competitions. Later, I completed a Master's degree in CS at ASU in the SEFCOM lab where I worked on Cyber-Physical Systems research, specifically, Programmable Logic Controllers (PLCs). My research was published in CCS 2020 under the title "HoneyPLC: A Next-Generation Honeytrap for Industrial Control Systems".

I love doing security research because it allows me to have fun by analyzing, understanding and sometimes breaking computer systems of all kinds. I can then use this knowledge to design and propose new methods to secure these systems. At the end of the day I want my research to have an impact on the real world by securing the systems that we all use on our daily lives. Another thing that I love about security research is that we have a very dynamic community. The security community produces amazing and diverse research that pushes the envelope constantly and I love being part of it.

My current Ph.D. research interests are Cyber-Physical Systems security in addition to security of satellites. Specifically, I am interested in the security of programmable logic controllers, satellite firmware security and satellite intrusion detections systems. I am currently working on a research project where we want to use security techniques and apply them to satellite firmware. For example, fuzzing and reverse engineering of satellite firmware.

After I graduate from my Ph.D. I plan to pursue a tenure-track faculty position in an institution where security research is important. I wish to continue my research on CPS and satellite security and to enhance it by applying other techniques such as fuzzing and machine learning.

I wish to attend the Annual Computer Security Applications Conference because it brings so many top-notch researchers from around the globe and it is the perfect opportunity for a Ph.D. student like to learn about the most cutting-edge research and to interact with such first-class researchers. In particular, I wish to meet and discuss research ideas with Dr. Daphne Yao, Dr. Brendan Saltaformaggio and Dr. Nitesh Saxena. Another major reason is that I wish to attend the ninth Industrial Control System Security (ICSS) Workshop. This workshop aligns perfectly with my CPS research interest and it would be a dream to attend.

I believe I am an ideal candidate because my research interests align nicely with the conference and ICSS workshop. Additionally, my current institution and home is in Corpus Christi, TX, which is about a three-hour ride from Austin. Because of this there is no airfare required for me to attend, just a bus or car ride. Additionally, I have never attended this conference and as such I would make the most of it.

Last but not least, as a member of the Hispanic community, attending this conference is important to me because we are severely underrepresented in the security research community and I would like to change that.

In conclusion, I am very excited to attend ACSAC this December, I believe I am an ideal candidate to receive this conferenceship and I thank you for your time and consideration.