



Undergraduate Research in Scientific Advancement (URSA)

URSA mentors and mentees must agree on the direction and goals of the mentoring relationship. This form will indicate your goals for the semester and contractualize this agreement.

This form should be completed during the first time mentees and mentors meet. We recommend mentees download, complete, and submit this form on their device.

Mentees must submit the form to the URSA Contract assignment on Canvas by **Sunday, September 14th, 2025 @ 11:59 PM.**

Sections 1-3 are meant for mentee completion.

1) Write a brief summary of what you and your mentor are looking to accomplish in your research project this semester. (3-5 sentences)

Using AICyberLake's data, a completed project that Mr. Cao Phuong has worked on, we will augment and secure the data pipeline of the Vera Rubin Observatory. Using AI we can help increase the security of the USDF and test various attacks, assess their risk management, and how to counteract them. We hope to work begin working with the Rubin data to actually increase its cybersecurity and have practical implications.

2) Broadly indicate the steps you will take to accomplish research goals you have set for the semester. (3-5 sentences)

We will first get data from the AICyberLake Project and preprocess and visualize it. After that, we will begin analyzing the data and training various models and assess how well they do against different cyberattacks and/or secure the transmission of data in the Rubin Observatory. Then we hope to actually work with the Rubin Observatory and implement the AI to help in astronomical applications there.



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3) What do you hope to learn and achieve by the end of the semester? (2-4 sentences)

As a CS + Astronomy major, I hope to learn more about AI and its applications in cybersecurity while also working with data from the Vera Rubin Observatory to touch a little bit on the astrophysics background I have. I am also really interested to be able to truly impact the observatory and help it through this research by implementing this project in practical applications and learning how that process actually works. Lastly, if the project gains traction, I hope to perhaps continue it past just this semester and publish/present our work to gain verification.

Sections 4-6 are meant for mentees and mentors to complete together.

4) List your information below.

This is meant for registration purposes with the university and for mentees and mentors to contact each other. The URSA Committee may also reach out using the different methods listed below if mentees/mentors/the Committee are not able to reach you over email.

Mentee Information:

Name	Suhaan Khan	NetID	suhaank2
UIN	678010199	Phone Number	5125841039

Mentor Information:

Name		NetID	pcao3
UIN	Phuong M Cao	Phone Number	831 200 3999



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- 5) What is the weekly time commitment you have agreed on? (This can be a range)

Time commitments can be up to 10 hours/week. This time commitment should be followed most weeks.

Flexibility will be permitted for heavy weeks (exams, trips, RSO commitments) but mentees should not consistently be working below the agreed time commitment.

Time Commitment	8-10 depending on the week	hrs/week
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- 6) By signing below, we confirm that we have read, completed, and agree with the terms listed in the contract. We will contact the URSA Committee at URSA-group@office365.illinois.edu with any additional questions and concerns.

Mentee Name	Suhaan Khan	Date	9/14/2025
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Mentor Name	<i>Phuong M Cao</i>	Date	09/14/2025
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