

## **Sophia Hou**

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### **Autobiography:**

Hi everyone! I'm Sophia Hou, a rising senior at Thomas Jefferson High School for Science and Technology in Alexandria, VA, and I'm super excited to be part of USAAIO this year!

If you asked a five-year-old me what I wanted to be, I'd probably say something like a Pokémon trainer. While those plans haven't exactly panned out (yet), I think that same curiosity and slight I've always seen math as the foundation of everything, even starting from elementary school. I started out with the puzzles my 3rd grade teacher gave me. I always went above and beyond thinking of these questions. Physics came next, largely because it felt effortlessly cool. The way it takes those same mathematical tools and applies them to motion, energy, and even outer space makes every lesson feel like a glimpse behind the curtain of reality. I was really interested in learning the multivariable calculus I learned in school could be applied to real life systems to model fluid flow and electromagnetic fields. I also started out with CS at a young age, working first with robotics through First Lego League. I was in charge of the coding there, learning my way with the simple blocks. Through my experience with CS, I decided to see how it could be applied to genuine problems, and that led me to interning at University of Maryland in the summer of 9th grade, working on image segmentation for spatial-temporal learning. From my internship, I learned really cool models like U-Nets, attention modules and Res-Nets. I continued my work to apply AI to real life through the Conrad Innovation Challenge last year, using it to diagnose ALS given muscle sensor data. Taking an AI class at school this year, coupled with preparing for and participating in competitions, strengthened my understanding of how AI weaves together math and physics into systems that can learn, adapt, and transform industries, convincing me that this field is just absolutely transformative.

I learned about the USAAIO this year, and prepared for the competition throughout March, April, and May. I'm especially interested in image segmentation and large language models. I love that

these subjects challenge us to build pipelines that see, speak, and think. I'm super excited to represent Team USA this year!

Outside of AI and math, I play and watch basketball, and I also love anime (Tower of God is probably favorite ...) and doing crosswords. I'm so grateful for the opportunity to be part of this community, and I can't wait to learn from everyone!