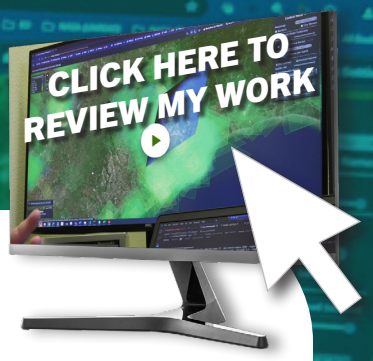
JETS II SPOTLIGHT

HIGHLIGHTS AROUND THE CONTRACT



ALEX STOKEN | Data Scientist

Science and Exploration Department/Exploration Science Group

How long have you worked on the JETS II Contract?

I have worked on the JETS II contract for 5 years.

What exactly is your role on the contract?

I am a data scientist supporting the Earth Science and Remote Sensing Unit, Image Science and Analysis Group, and Exploration Science projects. My day-to-day work encompasses building and training machine learning models for ISS and astronaut photography, analyzing geospatial data for Artemis landing site analysis, and developing software tools to automate and enhance tasks for the groups I work with.

What do you love most about your job?

I love the variety and impact of the work we do. In my own role, I enjoy the multitude of projects I've been fortunate to work on, spanning multiple focus areas (astronaut photography, ISS, astronaut pose estimation, Artemis). This variety keeps things interesting and challenging, as there are always new problems to solve. Additionally, working on human spaceflight is a constant source of inspiration - I love that the work I do plays a small part in supporting humanity's presence and exploration in space.

Tell us about a professional success story that you're proud of.

I'm really proud of my work on automatic astronaut photography localization. Astronauts take photos of Earth from the ISS (5 million and growing!), but because the crew uses handheld cameras and can point them in any direction, it's hard to know what location on Earth is in a photo (the crew can see, and photograph, half of North America at once). This was a longstanding problem when I joined our group because the lack of localization makes the photos difficult to use for additional analysis for Earth science and disaster response. Using modern machine learning models, I developed a system to find the precise location of these photos, making over 200,000 of them analysis ready and available to the public on a new map tool I created for our website. This work produced a publication at a top computer vision conference, and was later expanded to include nighttime photos as well. This was an incredibly rewarding project and I'm happy the photos can now be used to power additional science! You can check the geolocated photos out here: https://eol.jsc.nasa.gov/ExplorePhotos/ and learn more about the project here https://eol.jsc.nasa.gov/BeyondThePhotography/AutomatedGeolocalization/

Tell us about your professional development journey that led to this position.

This is my first job out of college. I began my studies as a physics major, interested in high energy physics and the fundamental forces that govern the universe. During a physics research internship, I was introduced to machine learning as a tool to search for particles. My interests evolved to machine learning itself, and I did an internship at NASA HQ building a virtual reality data analysis tool.

"Find ways to learn more about all the interesting work happening around the contract."

Growing up, I had always been interested in space, and this internship turned my path toward working in the space industry. At my university hackathon my senior year, a Jacobs representative asked my group if anyone wanted to interview for jobs at the nearby air force base they contracted at. Following that interview, my resume was instead forwarded to the Clear Lake Group, and after an interview in Houston, I joined JETS a few weeks after graduating college!

Describe an interesting hobby or past time that you have.

I became an avid runner during COVID as a way to get outside. Since then, running has become a core part of my life! I run most days of the week, and have come to enjoy pushing myself to do long distance running. I'll run the Houston Marathon this January.

What is a cause that you are passionate about? Why?

I'm passionate about STEM education and outreach, as they are great ways to get the next generation (and public in general) interested in science. Outreach programs like these are what got me into science in the first place. To that end, I've co-Directed the JSC Hackathon for the past 2 years, opening it up to students and the general public. Additionally, I've been on the JETS Educational Outreach Group leadership team, organizing school visits and building an AR sandbox with the rest of the leadership team to teach students about geology.

What tips or advice would you give a new employee?

There's tons of opportunities around the contract. Go to all of the poster sessions, lunch and learns, and any other way to learn more about all the interesting work happening. There might be some cool collaborations that come from it.