Jaahnavee Venkatraman
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Education	2021 – Present	**Doctor of Philosophy** Planetary Science
		University of California Los Angeles
		Advisor: Professor David A. Paige
	2018	**Bachelor of Science** Statistics, Minor in Geophysics and Space Physics
		University of California Los Angeles

Research and Work Experience

2021 – Present — Graduate Student Researcher
University of California Los Angeles
Dept. of Earth, Planetary, and Space Sciences (EPSS)
- Map the Lunar south pole with NASA LRO Diviner to determine the nature of thermal anomalies < 18 K.
- Map Lunar hydrogen abundance using Kaguya GRS data. Extrapolate hydrogen spectra from overlapping elemental abundances using a dimensionality reduction model.
- GPR testing for Mars2020 RIMFAX using gprpy, an open-source radar processing and visualization software.
- Modeled Lunar regolith thickness distributions using Diviner rock abundance maps. Paper [published in Elsevier: Planetary and Space Science](#).

2019 – 2020 — Staff Engineer
Booz Allen Hamilton
- Led the machine learning effort on a project for naval clients. Trained a classifier in Python using Keras TensorFlow for automated signal detection on a ball grid array (BGA).
- Support clients at the LA Air Force Base (LAAFB) and assist with database management, statistics, and visualization for military GPS receiver testing data on the Modernized GPS User Equipment (MGUE) program.
- Communications lead for Booz Allen Hamilton at the 2019 Society of Women Engineers (SWE) conference in Anaheim.

2018-2019 — Engineer
Booz Allen Hamilton
- Supported internal efforts to analyze data for the VEGA and Tactical Reconfigurable Underway Data Interface (TRUDI) projects. Reconstructed vehicular movements using GPS data, and correlated path with information from other sensors.
- Built a GNSS receiver using a USRP x310 SDR through a Linux VM. Captured GPS data using GNURadio.

2017 – 2018 — Undergraduate Student Researcher
University of California Los Angeles
- Assisted with graduate research on small craters to look for traces of polar water ice on the moon. Paper was featured on [NASA](#) and the [UCLA Newsroom](#).

2017 — Intern
Booz Allen Hamilton
- Developed initial prototype for HUD based indoor-outdoor navigation system using DAQRI's AR SmartHelmet.

- Wrote algorithms in R to parse, weight, and combine GPS and IMU data from the Helmet and GPS module.
- Wrote Kalman Filter script in R to minimize combined GPS/IMU error.

Awards and Honors	2020	Booz Allen Hamilton Silver Unflinching Courage Award for DoD PNT Program Office Certification Support.
	2019	Booz Allen Hamilton Silver Passionate Service Award for representing Booz Allen as the Communications Lead at the Society of Women Engineers Conference.
	2018	Booz Allen Hamilton Silver Passionate Service Award for supporting the firm's peripheral leadership-grooming activities.
	2018	Selected to give the UCLA Statistics Commencement speech.

Publications
1. **Venkatraman, J.**, Horvath, T., Powell, T. M. & Paige, D. A. (2023). Statistical estimated of rock-free Lunar regolith thickness from Diviner. *Elsevier: Planetary and Space Science, 229()*, , https://doi.org/10.1016/j.pss.2023.105662.
2. Rubanenko, L., **Venkatraman, J.** & Paige, D. A. (2019). Thick ice deposits in shallow simple craters on the Moon and Mercury. *Nat. Geosci. 12*, 597–601. https://doi.org/10.1038/s41561-019-0405-8.
3. Rahal, D., Chiang, J. J., Bower, J. E., Irwin, M. R., **Venkatraman, J.** & Fuligni, A. J. (2020). Subjective social status and stress responsivity in late adolescence. *Stress, 23*(1), 50-59, https://doi.org/10.1080/10253890.2019.1626369.

Scientific Presentations
1. **Venkatraman, J.** & Paige, D. A. (2022). Statistical estimated of rock-free Lunar regolith thickness from Diviner. *LPSC 2022*, #1944.
2. Rubanenko, L., **Venkatraman, J.** & Paige, D. A. (2018). The depth of simple craters and the permanent shadows they cast: Evidence for ice on Mercury but not on the moon. *LPSC 2018,* #2778.

Technical Skills
1. Languages: MATLAB, Python, R, SQL, Bash
2. Software: PostgreSQL, QGIS/ArcGIS, JMARS, GNU Radio
3. Geophysics Equipment: LaCoste-Romberg Gravimeter, Proton Magnetometer, GPR, Trimble GPS
4. Engineering Hardware: Arduino, HackRFOne SDR, USRP x310

Teaching and Outreach
1. Currently the Teaching Assistant for a UCLA upper-division undergraduate course - EPSS 101: Earth's Energy. Run labs each week for 60 students, conducting a variety of experiments, including charging a supercapacitor with solar energy, running a Stirling Engine with lab-distilled ethanol, and building wind turbines.
2. Member of the UCLA URGE (Unlearning Racism in Geoscience) Pod where we work to develop deliverables to deepen the department's knowledge on racism, diversity, and inclusion in our field.
3. Lead all outreach for the Diviner Lunar Radiometer Instrument. Participate in events such as UCLA EYU (Exploring Your Universe) to demonstrate the capabilities of data in the infrared.