

# R2022747 Lunar Rover Engineer (Computer Vision)

## Computer Scientist III

Chris Provencher – Hiring Manager

At NASA Ames Research Center in Silicon Valley, we are designing a Lunar prospecting mission to search for water ice in a polar region of the Moon. Join the Rover Navigation team on NASA's VIPER mission to the Moon. The first planetary rover to venture into permanent darkness!

<https://www.nasa.gov/feature/new-viper-lunar-rover-to-map-water-ice-on-the-moon>

Responsibilities include:

- Work to develop the first actively-illuminated stereo and wide-angle stereo mapping solutions for other worlds.
- Build robust systems that tightly integrate hardware and software in a verifiable manner.
- Interact with mission stakeholders who will use your computer vision systems to drive a \$250M rover, conduct new science, and explore the unknown

**\*\*\*Must be US Citizen or Permanent Resident\*\*\***

### Required Skills:

- MS in Computer Science, Robotics, or related field and 2 years of related experience
- Or PhD degree
- Knowledge of C++ and (Python or Matlab)
- Excellent knowledge of the mathematics and physics of image formation, computational stereopsis, and general computer vision concepts including projection, rectilinear and wide angle camera models, mono and stereo calibration, multi-view geometry, feature matching, radiometry, and high dynamic range imaging, etc.
- Understanding of common statistical methods, graphical models, or machine learning techniques
- A demonstrated history of delivering robust computer vision solutions for field robots – show us your publications, projects, or products
- Problem solver: ability to independently define vision problems, conduct background research, engineer a solution, and evaluate efficacy; follow the scientific method effectively
- Experimentalist: Able to demonstrate work through testing in both simulated and physical environments. Understand how to set up metrology, observations, and experimental controls when working to evaluate computer vision in a field environment.

### Desired Skills:

- Collaborative software development workflow: Atlassian toolset, git, etc.
- 3D graphics, rendering, or optics experience – BRDFs, ray tracing, Blender, Zemax, etc.
- Familiarity with the operational principles of CCD and CMOS image sensors.
- Knowledge of planetary robotics and the visual challenges associated with other worldly environments

- Aerospace project experience and familiarity with how technical development interfaces with systems engineering and project management.

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