



Optimize.

Channeling the vision since 1969.

SCIENTIFIC COMPUTING

AUTONOMY & DECISION SUPPORT

USRA scientists are leading the way in the development of **advanced automation** capabilities. Efforts in this area seek to develop computer software and algorithms to enable progressively more **independent decision-making** to be made by spacecraft and robots, instead of always relying on human ground controllers for guidance. Over time, this will lead to robots, spacecraft, and remote crews that can accomplish more with less communication with ground control, reducing mission costs and increasing scientific return.

IV&V

Software is an increasingly critical component in **aerospace systems**, and automated software testing technologies that use formal methods are emerging as a new approach for verifying and validating software for high levels of **reliability**, safety, and security. USRA scientists have a worldwide reputation in the advanced techniques for **software verification** and validation, including the use of formal methods with support for traditional and non-traditional software (e.g., neural network flight control software).

HIGH-END INFRASTRUCTURE

Charged with pushing the **boundaries of innovation**, government and industry must **work smarter** while juggling funding priorities. Computing infrastructure and architecture are at the forefront of efficient science operations. USRA scientists have a worldwide reputation in advanced techniques for **high-end cloud computing** infrastructure, with extensive capability in using cloud computing in the domain of scientific and engineering applications.

WHO ARE WE?

USRA is an independent, nonprofit research corporation where the combined efforts of in-house talent and university-based expertise merge to advance space science and technology. USRA works across disciplines including **biomedicine**, **astrophysics**, and **engineering** and integrates those competencies into applications ranging from **fundamental research** to **facility management** and **operations**. USRA engages the creativity and authoritative expertise of the research community to develop and deliver sophisticated, **forward-looking solutions** to Federal agencies and other customers - on schedule and within budget.

