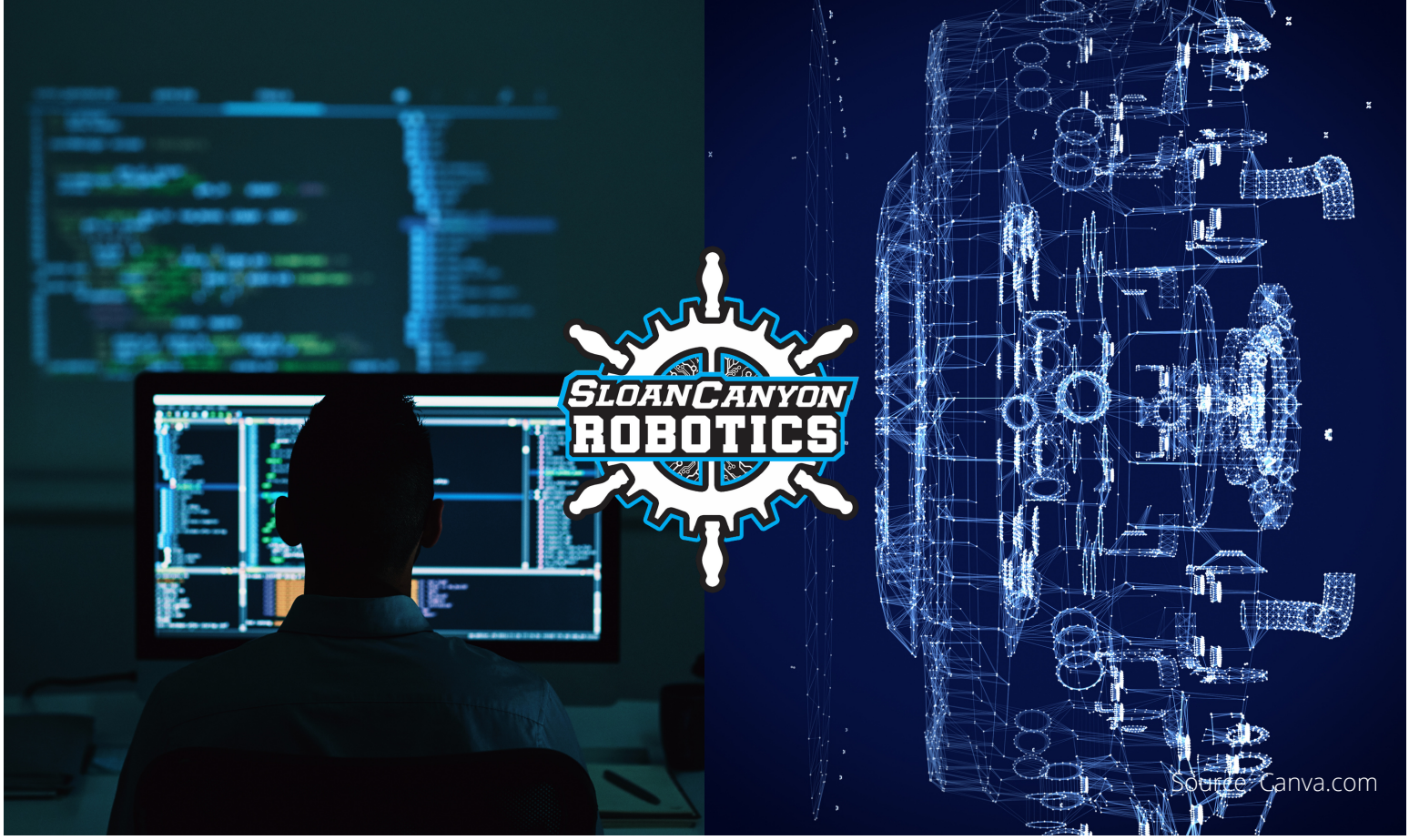
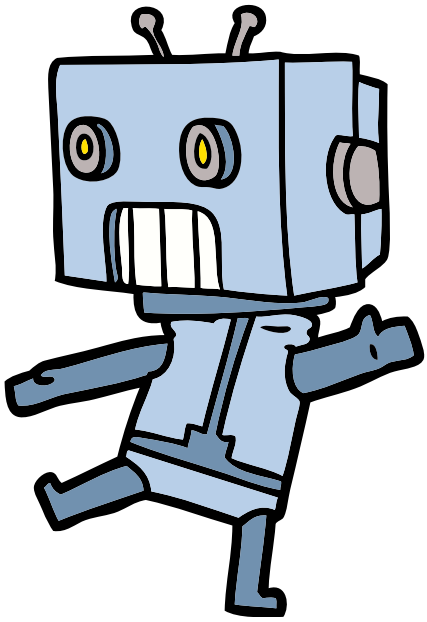


SOFTWARE ENGINEERING IN SPACE EXPLORATIONS



Author: Emma D.
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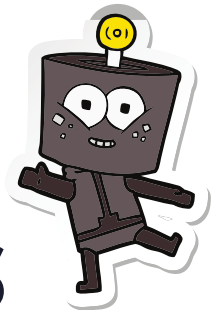
SOFTWARE ENGINEERING IN SPACE EXPLORATIONS



There are so many interesting careers in STEM available to choose from. One STEM career that you can choose to pursue is software engineering. Software engineers use knowledge of engineering principles and programming languages to develop computer games, build software products, and run network control systems.

Due to increasing reliance on mobile technology, the growing complexity of technology, and emerging industries, there is a lot of investment currently going into software engineering, and there is a high demand for skilled and qualified software engineers. Being involved in competitive robotics now can help to prepare you to work in this field later.

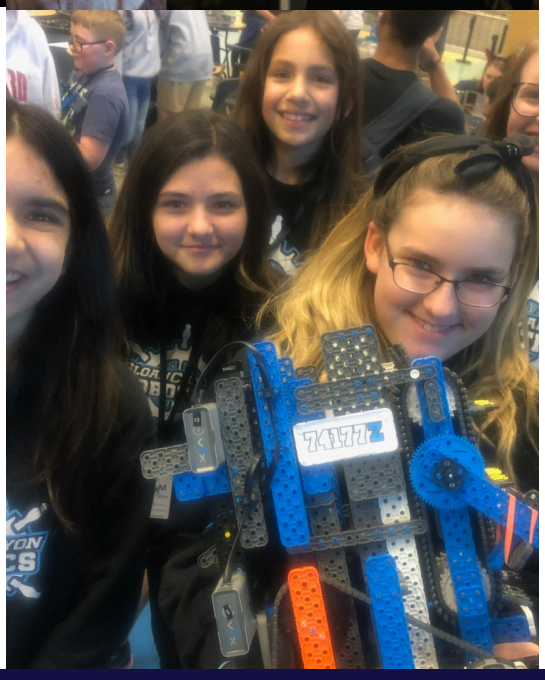
Programming Skills

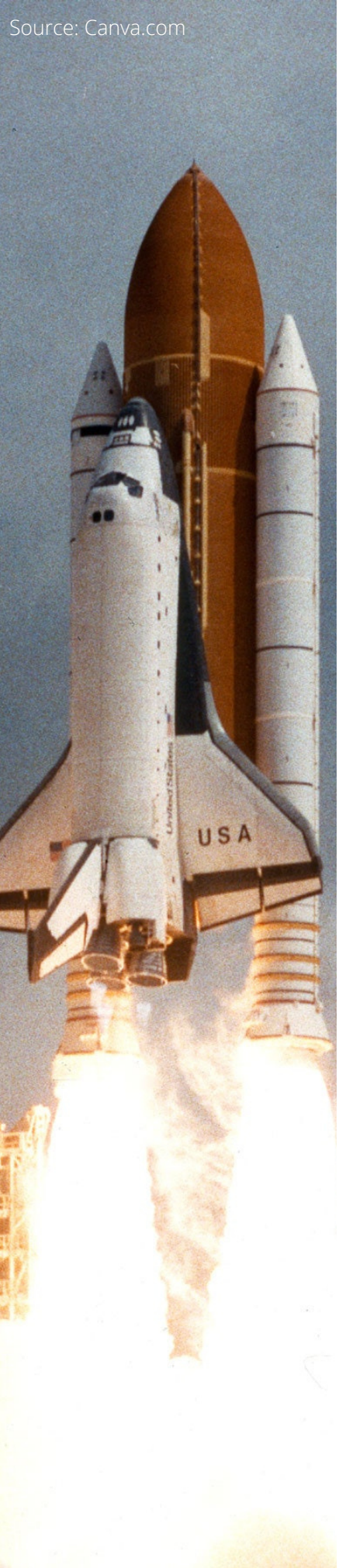
On a competitive robotics team, students learn to program their robot for the autonomous portion of the competition. This will prepare you to become a software engineer. Software engineers use programming skills everyday, and having experience with coding and programming is very important when going into this field.

"Software engineers often come across software issues, and they need to be able to solve the problem."

Working on a team

On a Vex robotics team, we also learn to work with a team and solve problems. Software engineers often come across software issues, and they need to be able to solve the problem. Working as a team allows software engineers to draw from the experience and knowledge of others and solve any problems that occur. Being able to work as a team and problem solve will prepare you for this career.





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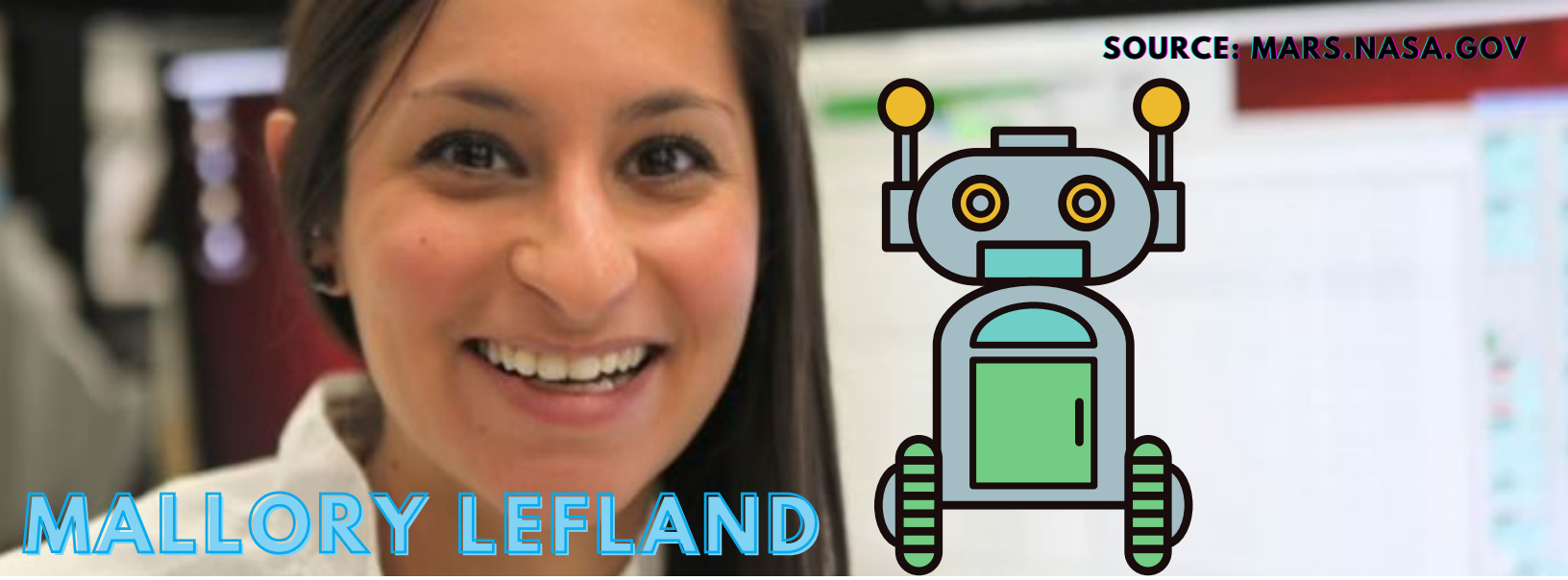
SOFTWARE ENGINEERING

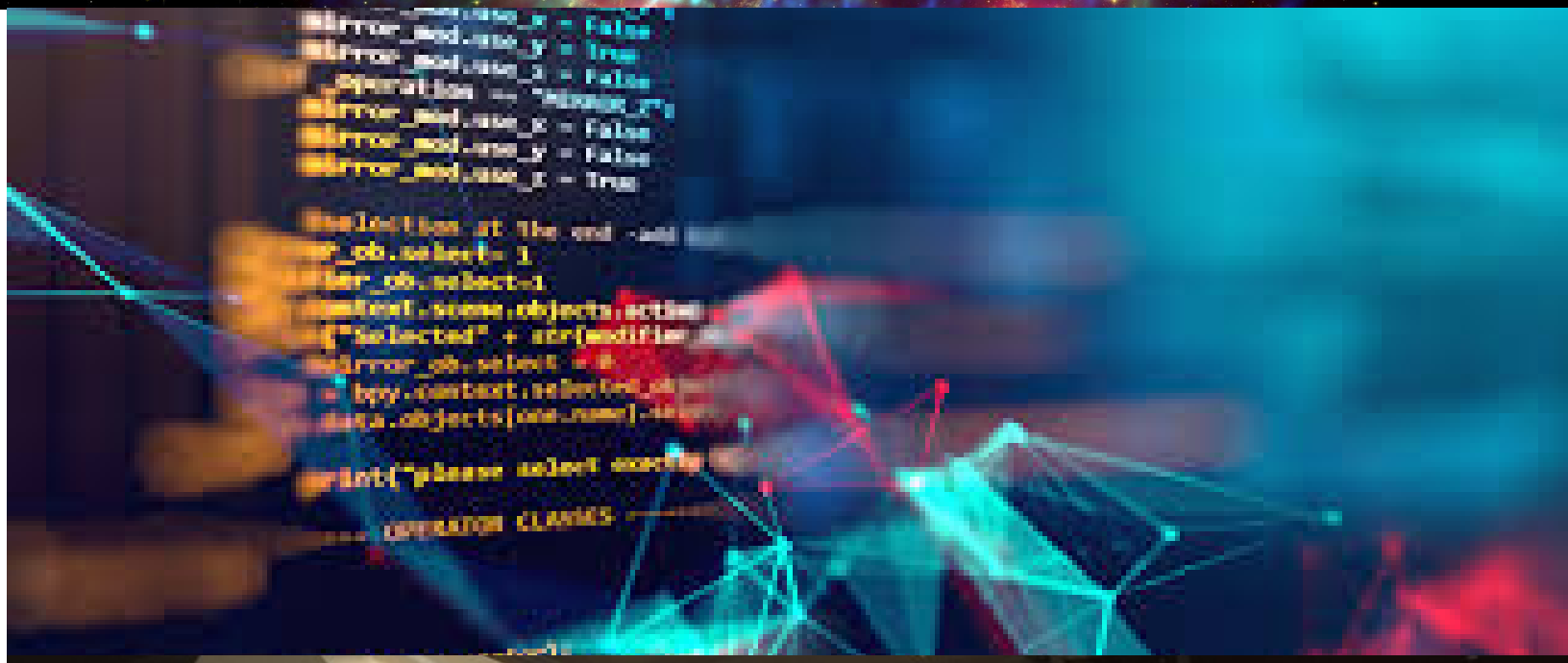
There are many different skills needed to become a software engineer. Professionals in this field usually have degrees in engineering, systems design, or computer science. Math aptitude is also necessary for software engineering careers, as computer code is essentially one big math and logic problem. Software engineers need to be familiar with programming, and they need to have strong critical thinking and problem solving skills. Effective teamwork is also crucial for software engineers. They must be able to effectively and efficiently share their knowledge and experience with their team in order to complete projects on time and within budget.

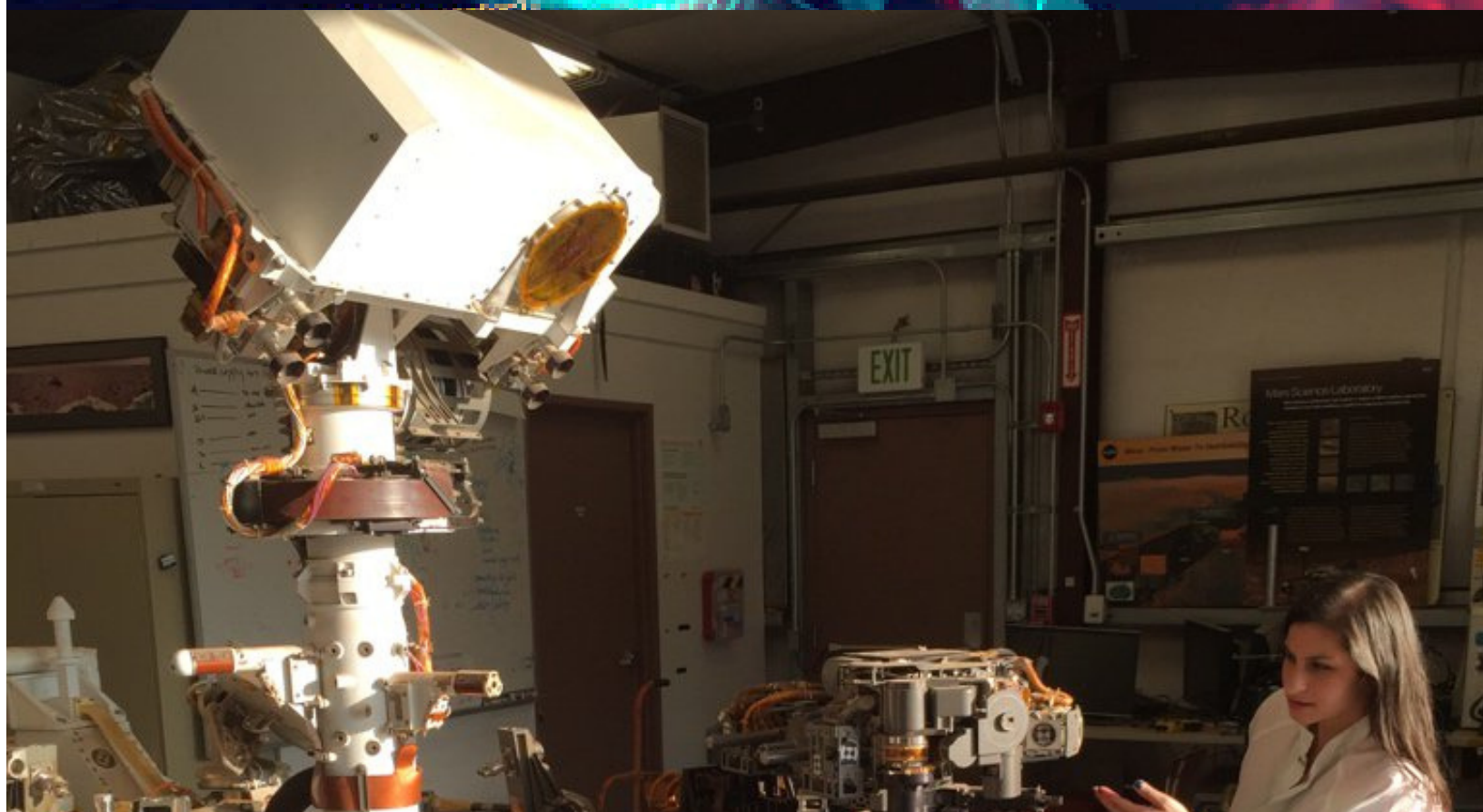
Software engineering is already a huge field. There are many large tech companies looking for skilled software engineers to hire, and even companies that aren't specifically tech companies need more and more software engineers as they develop more sophisticated websites. There are nowhere near enough qualified candidates to fill all the open positions. While increases in jobs in this field have slowed, this field is doing extremely well and the demand for software engineers will continue to grow as people rely more on technology, new tech companies pop up, and technologies become more advanced. As long as computers and computing continue to evolve, there will be lots of need for well-trained software engineers fit. As hardware technology gets stronger and stronger, it can support even more complex and challenging software, and computer companies will always strive to push the hardware's limits so they can deliver the most powerful machines and attract customers, resulting in more jobs for software engineers.



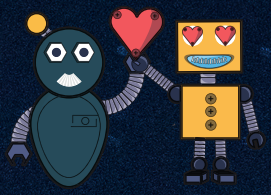
One of the many professionals in this field is Mallory Lefland, who is a systems engineer for the NASA Jet Propulsion Laboratory (JPL). She has a bachelor's degree in aerospace engineering from the Georgia Institute of Technology in Atlanta. In 2013, Mallory worked as a systems and operations engineer on the Mars Science Laboratory Curiosity rover. She is also playing a key role in the Mars 2020 mission, an extremely challenging undertaking to investigate the region of Mars that may have been favorable for microbial life. The mission will probe the Martian rocks for any evidence of past life, as well as gathering samples of soil and rock, and store them on the surface to potentially be brought back to Earth by a future mission. Mallory is serving as a member of Entry, Descent, and Landing (EDL) Systems Engineering Team. Her responsibilities include the planning and execution of the test plan for the EDL Timeline, which is the software engine that will be used to land a rover on Mars in 2021. She also enjoys serving as a mentor to young girls in science and math. Mallory says that learning and problem solving has directly applied to her work at JPL and really helps her when she is stuck with a problem in her work, because she can figure out how the system works and work with her team to fix it. She also says that asking lots of questions has really helped her. Many people don't want to ask questions because they feel that it means you don't understand anything, but Mallory believes that asking questions means you know enough to understand what you do and don't know, and you know you want to learn more. Mallory Lefland has inspired me to learn more about software engineering, because she made me realize that there are people doing things that I'm interested in doing, and she gave me a better idea of what type of education people in this field need to have. She also believes that there is no reason more women shouldn't go into the career field.

Source: Canva.com

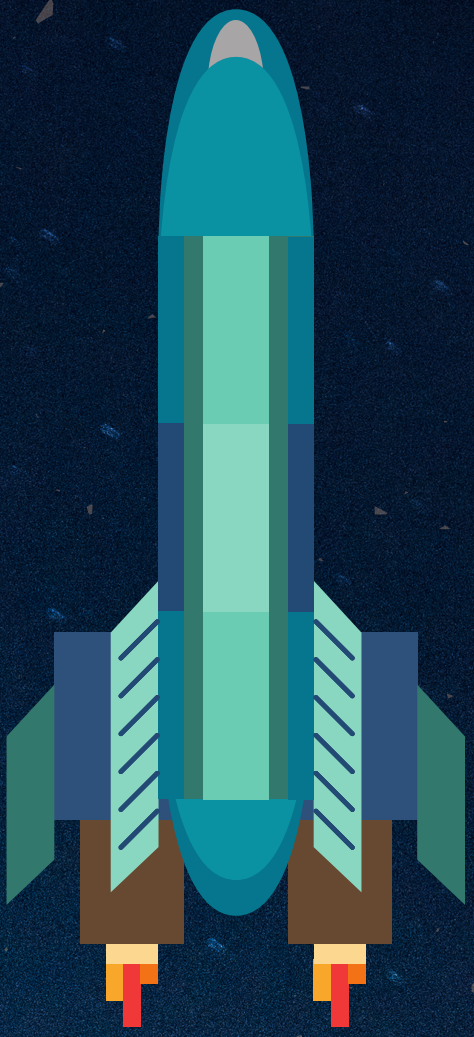




My goal



Reading and learning about Mallory Lefland and what she does helped me to realize a future career in programming rovers and landers is possible. Even though I'm interested in software engineering, part of sending rovers and landers to space is being able to work on a team with lots of different people, such as the hardware engineers who develop the computer systems and the geologists who can study samples of rock brought back from other planets, and on a vex robotics team, we also have to work with a team to prepare our robot for the competitions.



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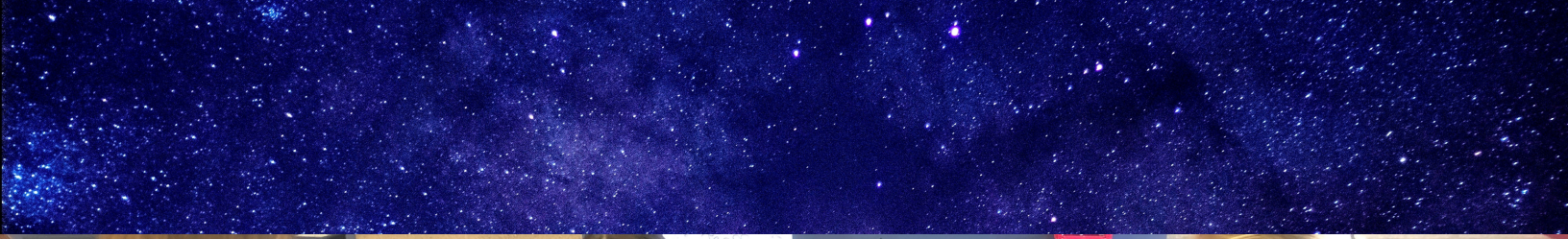


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Table
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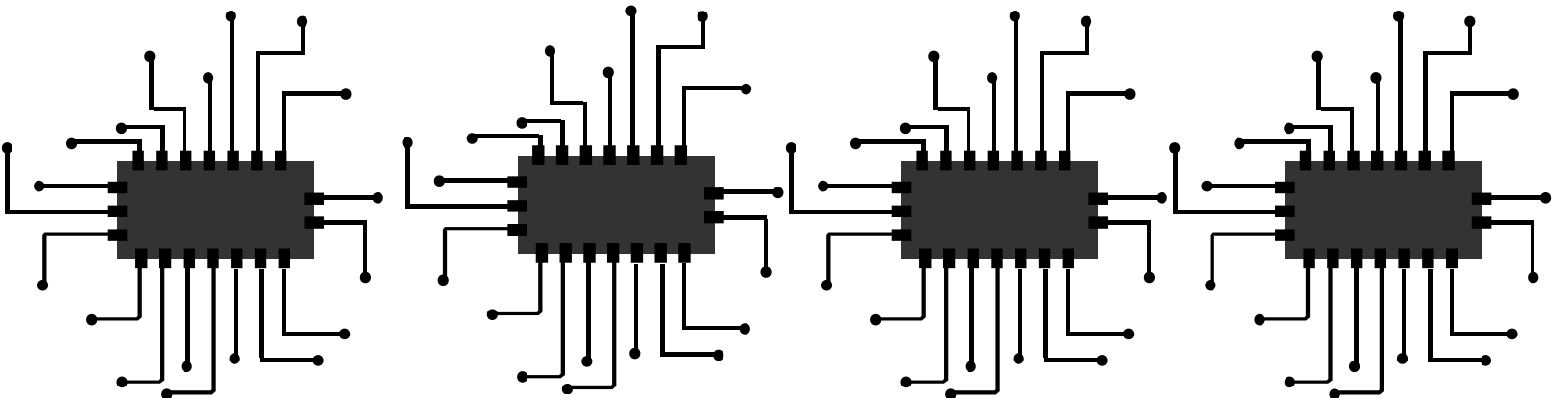
Entry title: Software Engineering in Space Exploration
Team number: 74177Z
Names of entrants: Emma Doyle and Deonna Egbert



SOFTWARE ENGINEERING IN SPACE EXPLORATION

BY EMMA DOYLE AND DEONNA EGBERT, TEAM #141772

Source: Canva.com