

PDAT 625G
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M4 Assignment - Cloud Computing Security and Data Science

I can see several cloud security management models that are described in the article rely on analytical and data-driven expertise.

Two security modules that would be a big use for data science are Risk Management and Risk Assessment. For these two modules, data scientists can analyze user history, system logs, user behavior and more to help predict breaches and predict high-risk areas. Statistical modeling and machine learning can also predict which assets need stronger protections, allowing businesses to use resources for improving efficiency rather than relying on guesswork.

Another model useful for data science is Vulnerability Assessment. With this, there are anomaly detection and pattern recognition techniques that can automatically flag suspicious activity or unusual system behavior. This proactive monitoring reduces response time and helps prevent disruptions.

Another strong security model would be Data Governance. This also requires careful tracking of where data is stored. Data scientists can design metadata systems, dashboards, and audits that map data lineage and ensure regulatory updates.

Finally, the Data Security module often depends on encryption strategies and techniques such as differential privacy or de-identification to allow organizations to analyze information while protecting the consumer. These contributions matter because security decisions grounded in evidence are more reliable and scalable. In cloud environments, protecting data is extremely important and should be routinely checked upon analysis.