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Autonomous Personal Airtravel Vehicles (APAVs), also known as eVTOLs, are a new concept enabled by advancements in unmanned aerial vehicle technologies and electric propulsion. They are intended to provide on-demand flight convenience, similar to that of private ground vehicles, and can be used by people with no pilot qualifications. APAVs use electric propulsion rotors to take off and land vertically, making them suitable for densely packed urban environments. They are being developed for a wide range of purposes, including urban transport, package delivery, and military applications. APAVs have many benefits, including reduced pollution and noise, and the existing infrastructure can support their operations in many major cities.

A reinforcement learning algorithm is well-suited for eVTOLs, as it is able to handle problems with infinitesimally small error rates. The system will be trained using sensory data to avoid collisions and maintain proper flight cabin pressures and oxygen levels. The reinforcement learning aspect will occur when the system makes predictions on test data, with correct predictions being reinforced and incorrect ones discarded. Safety and well-being of passengers will be the driving factor in the learning experience, with data sets being modified based on location and changing conditions. The weights for different parameters can be adjusted based on their importance to the eVTOL's operation.

The key learning outcomes for an eVTOL learning problem involve developing domain knowledge required to design, implement and maintain a system in a complex and non-deterministic environment. This includes understanding the challenges associated with eVTOL, collecting and processing raw data from various sensors and external sources, and deploying a trained model that is scalable, available, and reliable. The model should also be continuously monitored to make necessary updates and improvements over time.

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