DRONEUP

Team Future #3

A nature-inspired futuristic drone

THE PROBLEM

Current drone technology implies:
In conditions that result in abrupt drone movements such as turbulence or amateur operation, waiting for propellers to accelerate **wastes** valuable **response time**.

Even small, lightweight drones risk **stalling** and **falling** from the sky.

- Interchangeable payloads further affect the degree to which a drone can safely turn.
- As larger payloads demand greater lift, the turbulence threshold of the drone is lowered, increasing the risk of stalling during high-demand tasks such as package delivery.
- Differential blade rotation creates less-uniform noise emission, irritating human and wildlife populations.

THE DISCOVERY

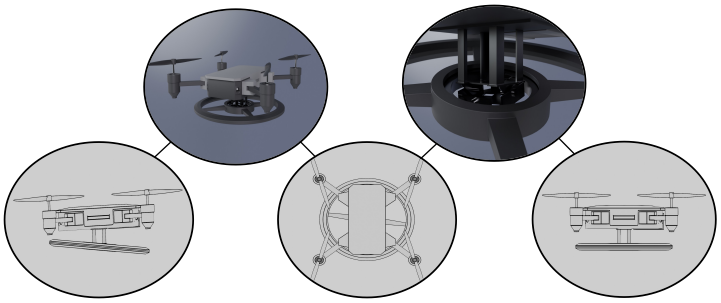
- Beetles stretch out their **forelegs** during flight. By using forelegs as counterweight, they generate enough **torque** to rotate mid-flight.
- This type of rotation is more **responsive** and **precise** than the rotation provided by wings alone.
- We believe the same principle is also applicable towards pitch and roll.

THE SOLUTION

- Standard-sized drone that can fly stable in air with its **counterweight** attached to the **bottom**, inspired by the flight postures of a beetle.
- Better response time than waiting for the propellers to accelerate, letting the drone react to potential stalling conditions more efficiently.
- Have **attachments** such as a camera, **capturing** rare moments of wildlife or realities of war in high quality.

NEXT PHASES

- Collaborate with **UAVs@Berkeley** for constructing effective, safe, and affordable drones with video cameras.
- Collaborate with **National Geographics** and war photographers to learn the know-hows on capturing unique moments on camera.
- Collaborate with **researchers from MIT** who have already succeeded in creating an insect sized drone.



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