Introduction

Nigel Pugh Impact Aerial Ltd Lecturer - Drones and Robotics

Nigel Pugh - Created Impact Aerial ltd in 2017 to address the growing technology advances in drones and robotics, across a wide range of industry verticals including Agriculture and Horticulture commercial applications.

DJI Agras Drones offer farmers precision agriculture technology, improving efficiency & reducing labour costs.

DJI Agras Drones revolutionise modern agriculture.

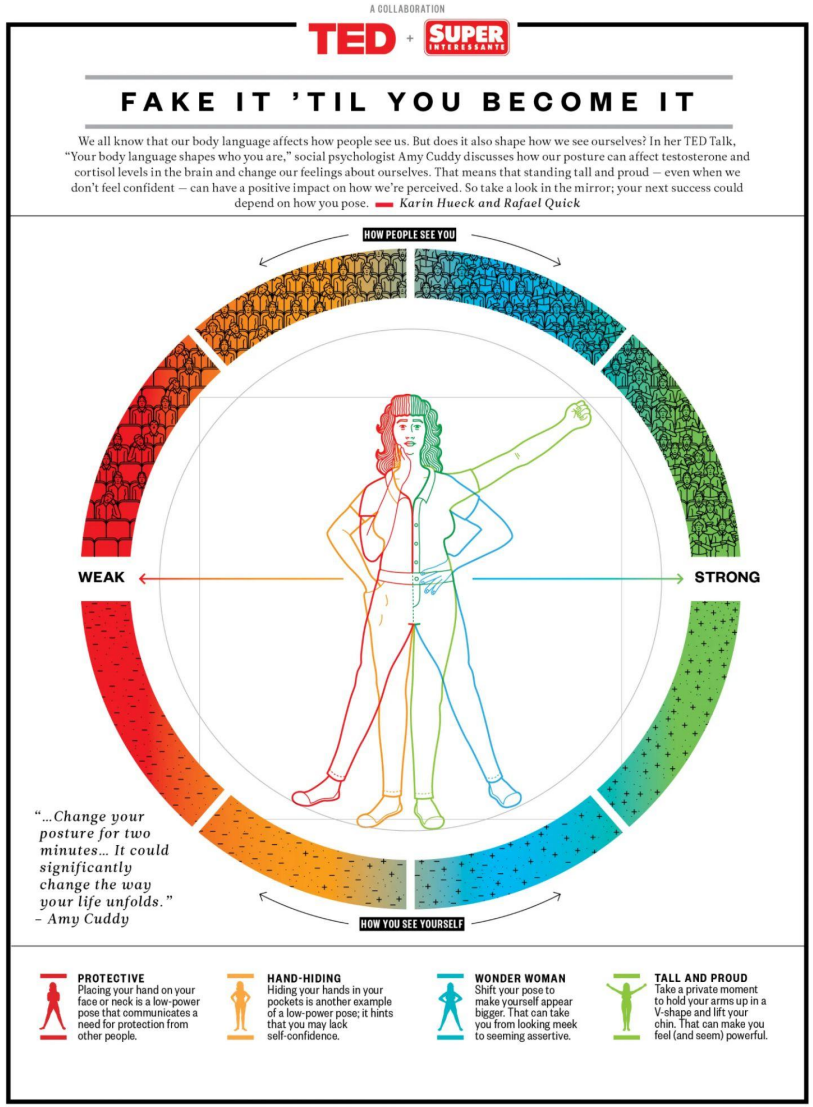
DJI Agras Drones offer farmers precision agriculture technology, improving efficiency & reducing labour costs. They enable targeted application, enhancing environmental benefits & safety. These drones support data-driven crop management & are scalable for all farm sizes.

A bit of fun!

My Favourite Ted Talk - Amy Cuddy

Your body lanugauage shapes who you are

- Heres a free Non Tech Life Hack.
- Change your posture for 2 Minuites.
- Try the Super Man or Wonder Woman Pose.
- Now see how you feel.



Agriculture Technology

Precision Seeding and Spraying

Benefits of Precision Seeding and Spraying

- Uniform seed distribution ensures optimal plant growth and reduces competition among crops.
- Accurate spraying techniques minimize pesticide and fertilizer waste, leading to cost savings.
- Automated route planning provides precise coverage, reducing labour and time requirements.
- Techniques minimize chemical drift, lessening environmental impact and promoting sustainability.
- Systems offer consistent application across varying terrains, enhancing crop uniformity.

Economics

Cost Savings and Economic Benefits of Drone Technology

- Lower labour costs with automated spraying, reducing the need for extensive manual input.
- Reduction in pesticide and fertiliser waste due to precise application techniques.
- Faster operation compared to traditional methods, saving time and resources.
- Lower maintenance costs than ground-based equipment, providing long-term financial benefits.
- Minimizing fuel costs associated with tractors, as drones require less energy.

Sustainability

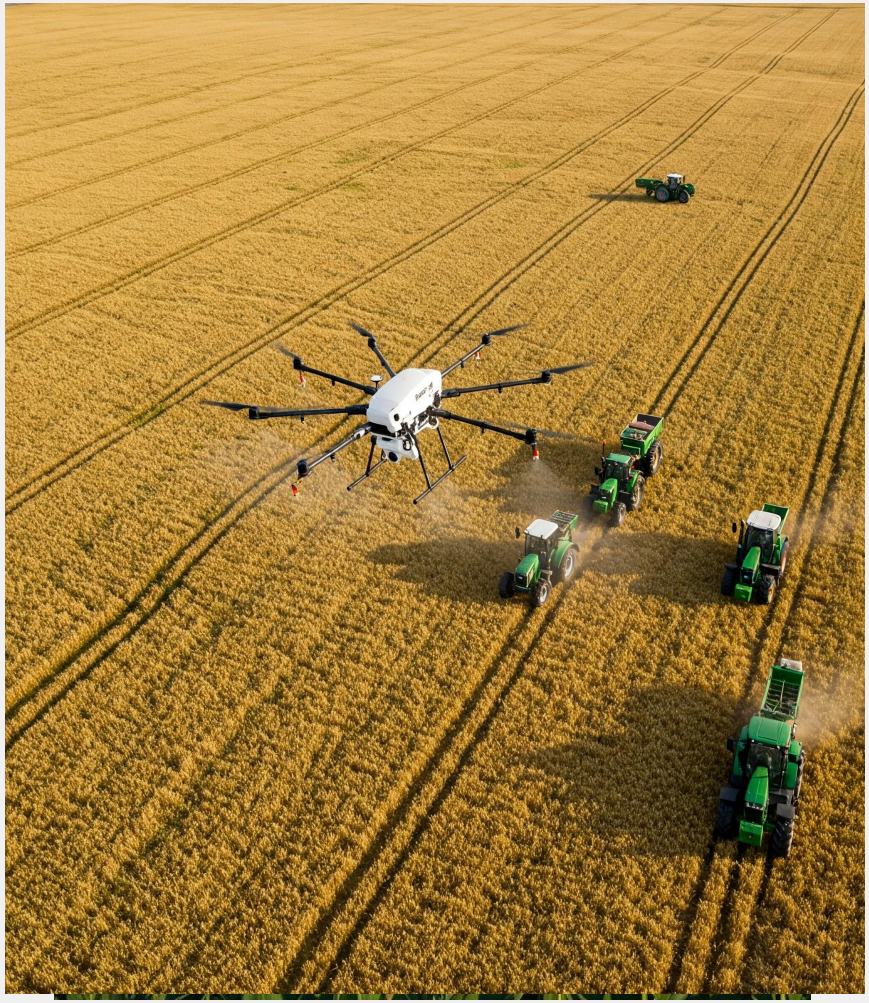
Environmental Sustainability in Modern Agriculture

Key Practices and Benefits

- Minimising pesticide runoff into water sources helps protect aquatic ecosystems.
- Reducing soil compaction from heavy machinery preserves soil health and structure.
- Lower CO2 emissions compared to traditional equipment contribute to a smaller carbon footprint.
- Targeted spraying reduces overall chemical usage, promoting safer environmental practices.
- Improving biodiversity by precise pest control supports a balanced ecosystem.

Agriculture

Increased Productivity and Yield



- Faster crop treatment reduces downtime, allowing for more efficient farm management.
- Consistent and uniform spraying improves plant health and promotes even growth across fields.
- Operating during critical growth stages ensures crops receive necessary care when it's most needed.
- Reducing crop losses from untreated pest infestations leads to healthier and more abundant harvests.
- Optimising fertiliser use contributes to higher yield and better resource management.

Safety

Safety and Risk Reduction in Modern Agriculture

- Minimising exposure to harmful chemicals for workers, ensuring a healthier workforce.
- Reducing accidents from manual spraying methods by utilising automated technology.
- Less reliance on hazardous equipment like tractors, leading to safer agricultural practices.
- Automated operations reduce human error, enhancing overall safety.
- Controlled spraying limits environmental hazards, protecting local ecosystems.

Technology

Ease of Use and Automation

Key Features of Our Automated Drones

- User-friendly interface for easy operation, allowing farmers to manage tasks efficiently without extensive training.
- AI-powered obstacle avoidance technology ensures safe navigation in complex environments, reducing the risk of accidents.
- Automatic battery swapping for continuous work, minimising downtime and maximising productivity.
- Real-time data collection for informed decision-making, enabling farmers to adjust strategies based on up-to-date information.
- Integration with farm management software for seamless data transfer and analysis.

Scalability

Scalability for Small and Large Farms

- Works effectively in small orchards and large fields, ensuring versatility.
- Modular design allows for easy expansion as farm operations grow.
- Multiple drones can work simultaneously, enhancing productivity.
- Customizable settings cater to different farming needs and crop types.
- Cost-effective solutions are available for both small farmers and large agribusinesses.

Case Study

Real-World Applications of AI in Agriculture

Key Case Studies and Impacts

- Successful implementation in apple orchards has led to increased pest control efficiency and healthier crops.
- AI technologies demonstrated efficiency in vineyards and tea plantations through optimized irrigation and nutrient application.
- Organic farms have witnessed improved crop quality by integrating AI systems for real-time soil and crop monitoring.
- Enhanced weed control has been achieved in large agricultural fields, reducing the need for chemical herbicides.
- Cost savings documented by farmers highlight the economic benefits of adopting AI-driven solutions.

DJI Agriculture - Official Video

An overview of the DJI T40 Agricultural Drone.

Outlook

Conclusion and Future Prospects

- DJI Agras drones offer significant benefits such as increased efficiency, precision, and cost-effectiveness in agriculture.
- The potential for advancements in drone technology can lead to further revolutionising agricultural practices.
- Government incentives are encouraging the adoption of drones in farming, fostering innovation and development.
- Integrating AI and machine learning with drones can enhance decision-making and optimise farming operations.
- Automation is playing an expanding role in sustainable farming, reducing the need for manual labour.