

### Swarm Robotics

Development and optimisation through AI

Duvivier Valentin



- Ant colony

- Fish Schooling





## Hardware



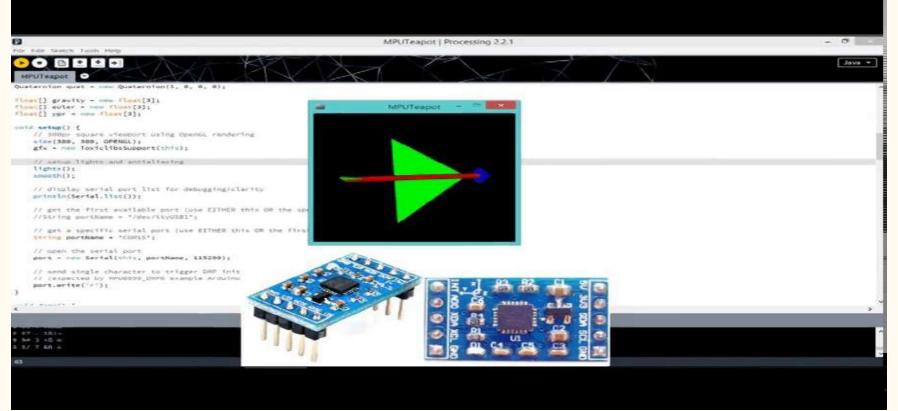
# IMU - GPS -Magnetometer

Angular rate

• Acceleration components

• True North







# Software: Communication -Algorithms



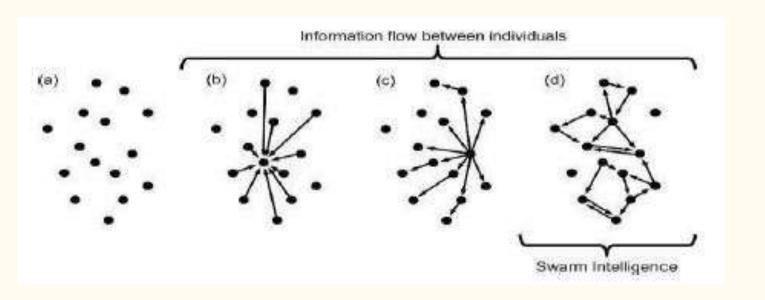
### Communication:

- IR
- Light signals





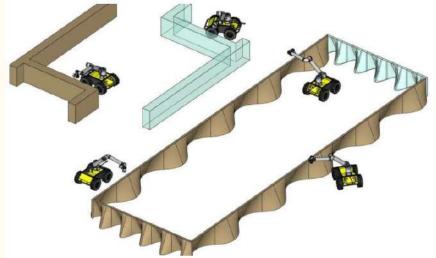
### Artificial intelligence





### Ex: Natural and manmade disasters







#### Conclusion

- Position Mapping

- Group-Learning

- Artificial Intelligence enhancement

### Bibliography

[1] Article in IAENG International Journal of Computer Science · May 2019

[2] Swarm Robotics: New Horizons in Military Research (MAY 23, 2018)

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[3] Intelligent Systems and Robotics Swarm Robots Move Toward Real-World Applications