



Trajectory-Based Cyber-Physical Networks: Theoretical Foundation and a Practical Implementation, Award Number: 1932326, Award Date: Oct 1, 2019 - Sept 30, 2022, Hossein Pishro-Nik, University of Massachusetts-Amherst

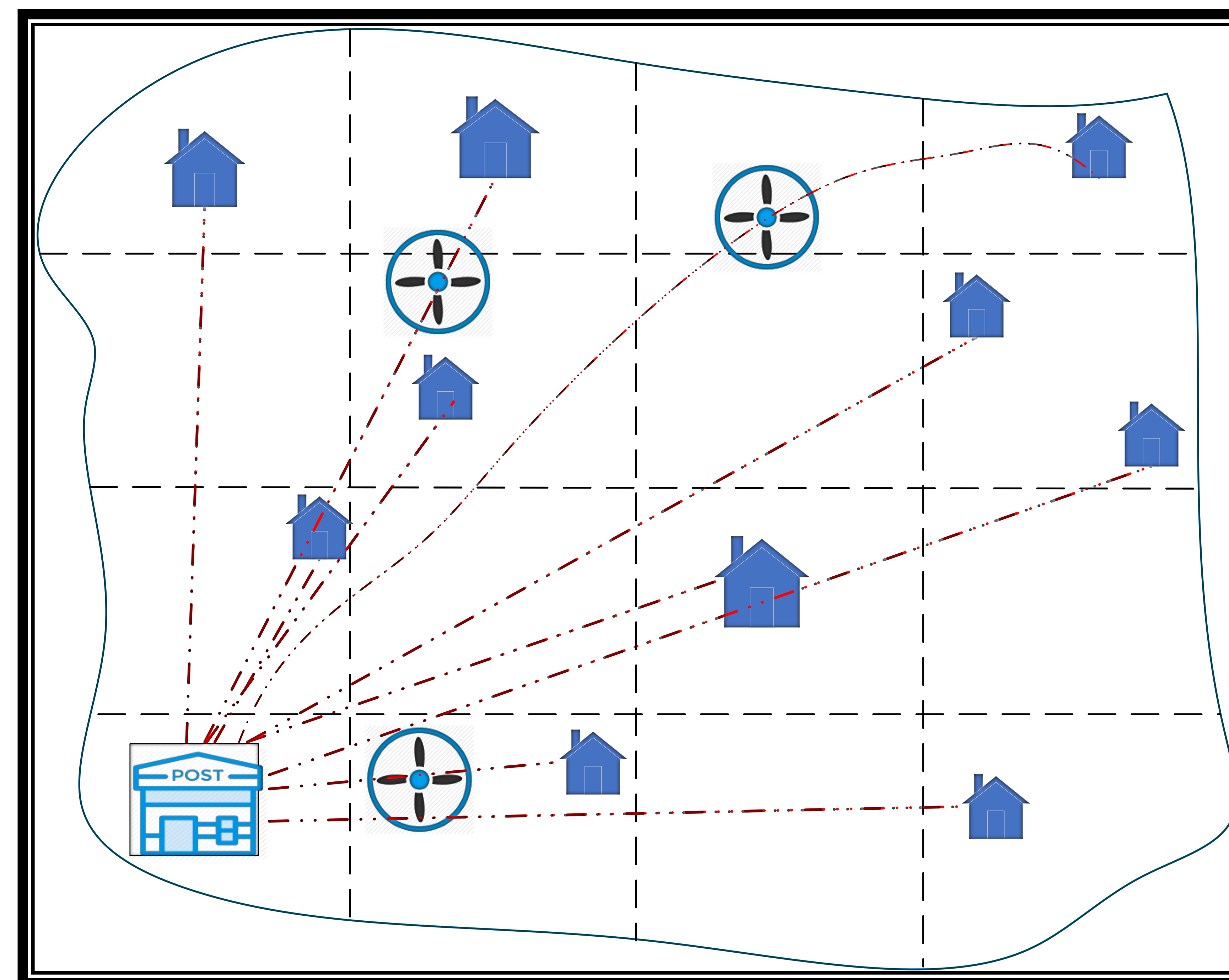
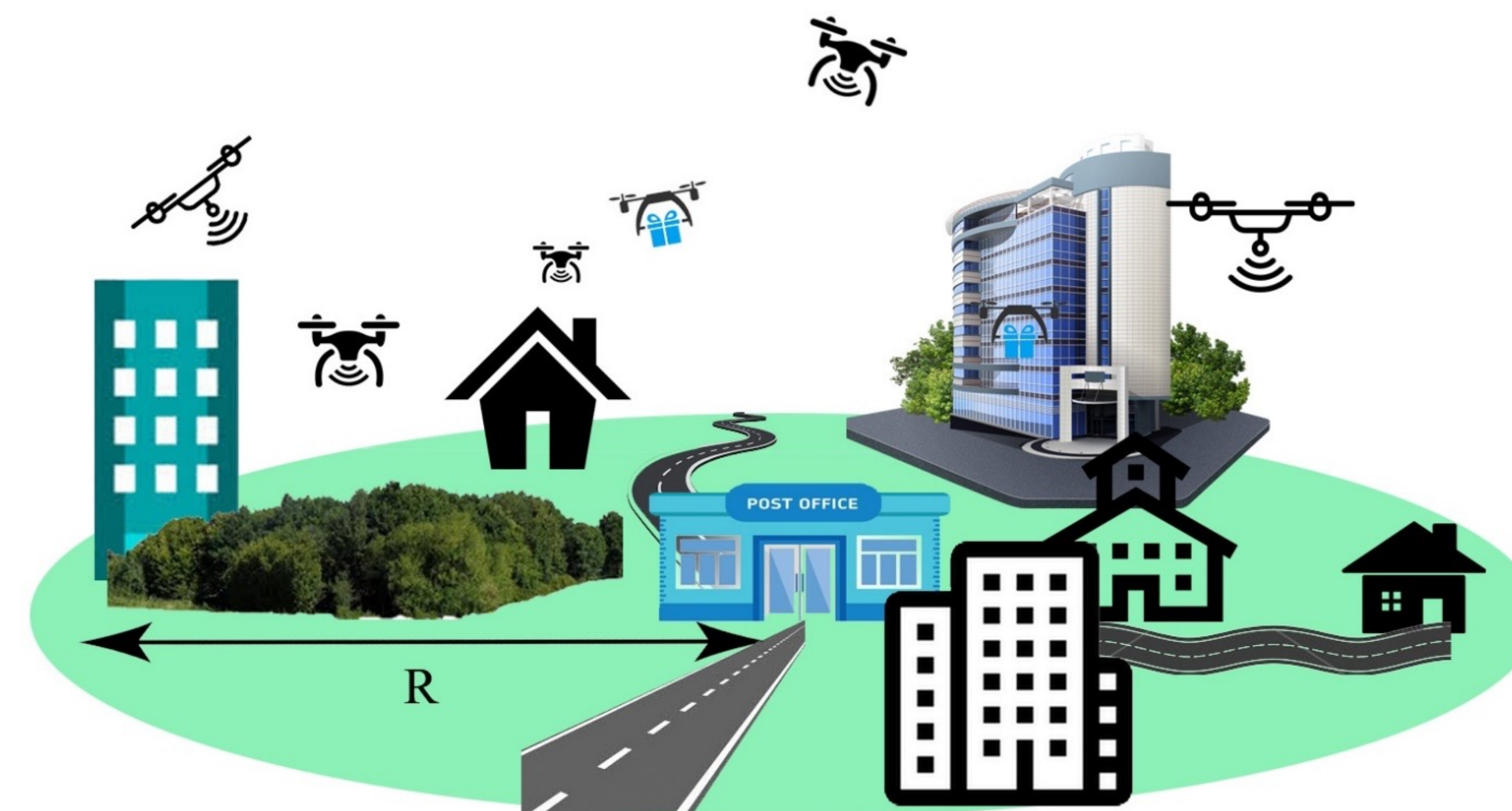
Challenge:

- Rigorous probabilistic theory to capture the dynamics of TCN
- Tradeoffs between wireless communications and transportation measures

Solution:

- Developing a unifying trajectory process theory
- Proposing a multipurpose drone network for delivery and communication
- Proposing general trajectories for generally-shaped areas

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Scientific Impact:

- Theoretical foundation for trajectory processes using probability theory and stochastic geometry
- Design and analysis of practical trajectories for communication and delivery

Broader Impact:

- Mobile robots including
 - Delivery applications
 - Search and rescue applications
- Undergraduate students involvement