AI synergy!

Intelligent space surveillance

Radu Dănescu

Computer Science Department, UTCN

radu.danescu@cs.utcluj.ro
users.utcluj.ro/~rdanescu

ai forum UTCN

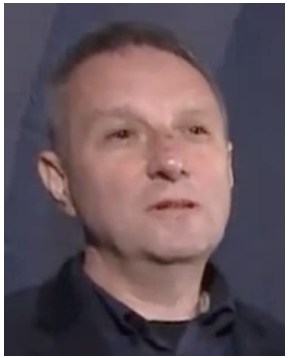
Research team and collaborators

- IPPRRC@UTCN and the Astronomical Observatory, Romanian Academy

Radu Danescu

Razvan Itu

Attila Fuzes



Vlad Turcu

Optical surveillance of orbiting objects

- Surveying and updating orbital parameters of LEO satellites
- Prediction of atmospheric reentry time and place
- Detection of in-orbit maneuvers
- Discovery of non-catalogued objects
- Prevention of collisions

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Challenges - how can AI help

- Large variability of input data: 8-bit, 14-bit, 16-bit images, low or high contrast, high or low light pollution, clouds, narrow FoV, wide FoV ...
  - **A unified processing system for all the image sources!**
- Automatic and real time calibration using the stars
- Fusion of data from multiple sources (cameras, telescopes, radar, catalog information ...)

Challenges - how can AI help

- Automatic association between known objects and the detected objects
- Orbital parameters refinement
- Modeling of atmospheric drag, modeling of satellite dynamics, modeling of satellite maneuvers
- Association of orbital decay with space weather events (solar explosions, etc)

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Collaboration inquiry/offer

Open for

Research and Development Collaborations

on **Space Surveillance and Tracking** - hardware and software solutions

- Participation in international consortia
- National and European strategic autonomy
- Development of space surveillance products