

## 2019 IEEE Applied Imagery Pattern Recognition Workshop

### Call for Papers



## AIPR 2019

# Cognition, Collaboration, and Cloud

Cosmos Club, Washington, D.C.

October 15-17, 2019

Human interactions with artificial intelligence agents is undergoing unprecedented revolutionary advances that will transform the future of society. Global social media networks, nearly unlimited bandwidth and sharing of imagery, structured multimedia, and unstructured knowledge have spurred collaboration in unexpected ways. Mobility and cloud services have enabled rapid collection and dissemination of high volume, imaging and multimodal sensor data integrated with low latency database services with increasing AI sophistication. Advancing the state-of-the-art in AI learning in complex data environments, deploying AI systems in novel and unfamiliar environments will be critical for developing scalable cognitive systems. Resource constrained AI accessible at the point of need with more generalizable, explainable, and predictable AI for imaging and video will enhance the utility of cognitive and collaborative systems.

Petabytes of imagery and multimodal datasets describing environmental, cultural, civil, and political institutions are now publically available on a global scale. Cloud resources have enabled the integration of diverse datasets and collaboration among individuals across the globe and spanning the gamut of scientific and engineering disciplines. The power of collaboration both human-human and human-machine enables integration across cultural experiences and offers the promise for expanding cultural identities and artifacts. Cognitive and computational algorithms are evolving and adapt to different learning styles and backgrounds, preserve and share knowledge globally across linguistic boundaries. Current cognitive studies are realizing human activities and responses to enable more realistic simulations. The 2019 IEEE AIPR Workshop will explore these cognitive applications of vision, dynamic scene understanding, machine learning, the associated supporting applications, and the system engineering to support the dynamic workflows.

The Workshop Committee invites papers that address any aspects of how computational cognition has used human collaboration to improve the science of pattern recognition, development of novel tools, and theory and mechanics of computational cognition. Topics include, but are not limited to, the following:

- Multi-agent systems, Cognitive & Explanatory AI
- Cooperative Human-Robot Intelligence, Transfer Learning for Skill Acquisition
- Autonomous Driving Systems
- Organically Adaptive Deep Learning for Novel Environments and Situations
- Human-Machine Collaborative Exploration of Dynamic Environments
- Remote Sensing and Autonomy
- Collaborative Learning Between Human and Robotic Systems
- Visual Cloud Computing
- Block Chains and Imaging to Track Computational Cognition and Provenance
- Medical Applications, Hyperspectral Data Fusion
- Building of computational cognition from simple learning strategies
- Transfer learning of behaviors
- And of course, advancing pattern recognition and image analysis

Abstracts are now being accepted through our online submission site: <https://cmt3.research.microsoft.com/AIPR2019/>. Questions (or if there are problems with the online submission) may be emailed to: [Programchair2019@aipr-workshop.org](mailto:Programchair2019@aipr-workshop.org)

**Deadline for abstracts: 15 June 2019.** The Workshop will include oral and poster presentations, several keynote talks that provide in-depth overviews of the fields, and a debate between two experts on a fundamental question. Written papers will be required (due after the workshop) and will be indexed in IEEE Xplore. AIPR 2019, the 48th annual workshop, is sponsored by the IEEE Computer Society Technical Committee on Pattern Analysis and Machine Intelligence, and organized by the AIPR Workshop Committee with generous support from other sponsors. Updates and additional information can be found at [www.aipr-workshop.org](http://www.aipr-workshop.org).