



AIdSH: International Workshop on AI-driven Smart Healthcare

in conjunction with the

2020 IEEE Global Communications Conference (GLOBECOM)

Taipei, Taiwan - 7-11 December 2020

<https://globecom2020.ieee-globecom.org/workshop/ws-11-workshop-ai-driven-smart-healthcare-aidsh>

MISSION:

Health is one of the major research topics that have been attracting cross-disciplinary research groups. The deployment of new emerging technologies for Health, with the gradual integration of Internet of Things (IoT) and Artificial Intelligence techniques, is attracting the interest of many researchers. Within this framework, healthcare is becoming a ubiquitous, complex, sophisticated, efficient and autonomous ecosystem.

The workshop on AI-driven Smart Healthcare (AIdSH) aims at bringing together researchers from academia, industry, government and medical centers in order to present the state of the art and discuss the latest advances in the emerging area of the use of Internet of Things (IoT), Artificial Intelligence, and Soft Computing techniques, be they black boxes or explanation-based, to signals, images, and data in the fields of medicine, healthcare and wellbeing.

An important aspect related to the healthcare systems is the implementation of apt security measures. About that, one of the latest trends involves artificial intelligence (AI)-driven technologies that allow seamless management of heterogenous data while designing highly decisive attack patterns to accurately foresee hacker's behavior. Additionally, game-theoretic approaches have also surfaced as eminent candidates for cyber defense to optimally address the complex decision-making problems

AIdSH is expected to cover the whole range of theoretical and practical aspects, technologies and systems related to the application of artificial intelligence and soft computing methodologies to issues as machine learning, deep learning, knowledge discovery, decision support, regression, forecasting, optimization and feature selection in the healthcare and wellbeing domain, as well as the application of AI-based cyber security for smart healthcare ecosystem.

In light of the current pandemic, severely affecting the whole world, papers focusing on the application of the above ideas to any issue related to COVID-19 are highly welcome.

TOPICS:

The topics of interest include, but are not limited to, the application of Internet of Things (IoT), Artificial Intelligence and Soft Computing methodologies to the areas listed below

- Knowledge Management of Health Data;
- Data Mining and Knowledge Discovery in Healthcare;
- Machine and Deep learning approaches for Health Data;
- Explainable AI models for health, biology and medicine;
- Decision Support Systems for Healthcare and Wellbeing;
- AI for Precision Medicine;
- Optimization for Healthcare problems;
- Regression and Forecasting for medical and/or biomedical signals;
- Healthcare Information Systems;
- Wellness Information Systems;
- Medical Signal and Image Processing and Techniques;
- Medical Expert Systems;
- Diagnosis and Therapy Support Systems;
- Biomedical Applications;
- Applications of AI in Healthcare and Wellbeing Systems;
- Machine Learning-based Medical Systems;
- Medical Data and Knowledge Bases;
- Neural Networks in Medicine;
- Ambient Intelligence and Pervasive Computing in Medicine and Healthcare;
- AI in genomics;
- AI for Healthcare Social Networks;
- New framework, algorithms, and protocol designs for AI-based healthcare Cyber Physical Systems (CPSs);
- Case-studies, applications, and prototypes for healthcare cyber security;
- Simulation, testing and formal verification of AI-based security solutions for healthcare;
- Machine learning driven IDS/IPS solutions for healthcare CPSs;
- Networking and Computing Architecture AI-based healthcare CPSs;
- Big data analytic frameworks for AI-powered healthcare CPSs;
- Game theory based secure and trustable solutions for healthcare systems;
- Cloud/grid/edge computing for healthcare CPSs;
- Data-driven optimization of AI-based healthcare networks;
- Proactive network monitoring architecture for healthcare CPSs;
- Energy-efficient network operations for healthcare CPSs via AI/ML;
- Self-Learning and adaptive networking protocols for real-world CPSs;
- Exploiting 5G and Beyond for AI-aided healthcare solutions;
- Deep and reinforcement learning based security solutions for attack prediction in CPSs;
- AI based security solutions for IMDs, smart sensors, wearables, etc;
- Human-machine interaction for healthcare cyber security;
- Other standards, policies and regulations for integrating IoT paradigms in CPSs.

PAPER SUBMISSION:



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7-11 December 2020 // Taipei, Taiwan
Communications for Human and Machine Intelligence



Manuscripts should describe original work and should be no more than SIX (6) printed pages (10-point font) and must be written in English. Initial submissions longer than SIX (6) pages will be rejected without review.

All final submissions of accepted papers must be written in English with a maximum paper length of six (6) printed pages (10-point font) including figures. No more than one (1) additional printed page (10-point font) may be included in final submissions and the extra page (the 7th page) will incur an over length page charge of US\$100. All final papers must be submitted to the IEEE Conference eXpress website.

Authors must use the IEEE conference proceedings format obtainable at:

<https://www.ieee.org/conferences/publishing/templates.html>

All papers for the AidSH Workshop should be submitted via EDAS using the following link:

<https://edas.info/N27527>

At least one author of each accepted paper is required to register for the conference and present the paper. Only registered and presented papers will be published in the conference proceedings. Accepted and presented papers will be published in the IEEE GLOBECOM 2020 Conference Proceedings and submitted to IEEE Xplore.

If you have any questions regarding the submission of manuscripts, please contact one of the Technical Program Chairs of the Symposia that you are submitting a paper.

JOURNAL SPECIAL ISSUES:

Authors of selected papers will be invited to submit an extended version on prestigious international journal special issues that are connected to AI-driven Smart Healthcare:

- **IEEE Journal on Biomedical and Health Informatics** - ISSN 2073-431X, Scopus (Elsevier) and Web of Science (Clarivate Analytics), Impact Factor 4.217 - [Special Issue on "Enabling Technologies for Next Generation Telehealthcare"](#).
- **Computers** - ISSN 2073-431X, Scopus (Elsevier) and Web of Science (Clarivate Analytics) indexed - [Special Issue on "Artificial Intelligence for Health"](#). Article Processing Charges waived for authors.
- **Human-centric Computing and Information Sciences** - ISSN: 2192-1962, Springer and Web of Science (Clarivate Analytics) indexed, Impact Factor 3.212.

IMPORTANT DATES:

- Submission: ~~15 July 2020~~ **August 1, 2020 (Extended)**
- Notification: 1 September 2020
- Camera Ready: 1 October 2020

VENUE:

The conference will be held in Taipei, Taiwan. More info will be available soon on

<https://globecom2020.ieee-globecom.org/>

FOR ANY OTHER INFORMATION, PLEASE VISIT

<https://globecom2020.ieee-globecom.org/workshop/ws-11-workshop-ai-driven-smart-healthcare-aidsh>