

TEMATICĂ

pentru concursul de admitere la doctorat în domeniul
Ingineria Sistemelor – Septembrie 2019

TEMELE PROPUSE:

- Inteligență artificială: Aplicații în domeniul extrapolării imaginilor medicale
- Inteligență artificială: Aplicații în domeniul registrării și fuziunii imaginilor medicale
- Utilizarea învățării automate în controlul proceselor

BIBLIOGRAFIE:

- [1] Ian Goodfellow et al., *Deep Learning, Adaptive Computation and Machine Learning series*, MIT Press, 2016.
- [2] Francois Chollet, *Deep Learning with Python*, Manning, 2017.
- [3] Zhu, J.-Y., Park, T., Isola, P., Efros, A., "Unpaired Image-to-Image Translation using Cycle-Consistent Adversarial Networks", *Int. Conf. Comp. Vis. (ICCV)*, 2017.
- [4] Isola, P., Zhu, J.-Y., Zhou, T., Efros, A.A., "Image-to-image translation with conditional adversarial networks," *2017 IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, pp. 5967–5976, 2017.
- [5] Yang, Q., Yan, P., Zhang, Y., Yu, H., Shi, Y., Mou, X., Kalra, M. K., Zhang, Sun, L., Wang, G., "Low-dose ct image denoising using a generative adversarial network with wasserstein distance and perceptual loss," *IEEE Transactions on Medical Imaging*, vol. 37, pp. 1348–1357, 2018.
- [6] Kangbeom Cheon et al., *On Replacing PID Controller with Deep Learning Controller for DC Motor System*, *Journal of Automation and Control Engineering* Vol. 3, No. 6, December 2015.
- [7] S.P.K. Spielberg et al., *Deep Reinforcement Learning Approaches for Process Control*, *6th International Symposium on Advanced Control of Industrial Processes*, 2017.

TOPICS

for the doctoral program admission competition in the field of
Systems Engineering – September 2019

PROPOSED TOPICS:

- Artificial intelligence: Application to medical image extrapolation
- Artificial intelligence: Application to medical image registration and fusion
- Deep reinforcement learning for process control

REFERENCES:

- [1] Ian Goodfellow et al., Deep Learning, Adaptive Computation and Machine Learning series, MIT Press, 2016.
- [2] Francois Chollet, Deep Learning with Python, Manning, 2017.
- [3] Zhu, J.-Y., Park, T., Isola, P., Efros, A., "Unpaired Image-to-Image Translation using Cycle-Consistent Adversarial Networks", Int. Conf. Comp. Vis. (ICCV), 2017.
- [4] Isola, P., Zhu, J.-Y., Zhou, T., Efros, A.A., "Image-to-image translation with conditional adversarial networks," 2017 IEEE Conference on Computer Vision and Pattern Recognition (CVPR), pp. 5967–5976, 2017.
- [5] Yang, Q., Yan, P., Zhang, Y., Yu, H., Shi, Y., Mou, X., Kalra, M. K., Zhang, Sun, L., Wang, G., "Low-dose ct image denoising using a generative adversarial network with wasserstein distance and perceptual loss," IEEE Transactions on Medical Imaging, vol. 37, pp. 1348–1357, 2018.
- [6] Kangbeom Cheon et al., On Replacing PID Controller with Deep Learning Controller for DC Motor System, Journal of Automation and Control Engineering Vol. 3, No. 6, December 2015.
- [7] S.P.K. Spielberg et al., Deep Reinforcement Learning Approaches for Process Control, 6th International Symposium on Advanced Control of Industrial Processes, 2017.