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GENERAL INFORMATION

RESEARCH INTERESTS

Graph Signal Processing - Graph Neural Networks - Nonlinear Optimization (Deep Learning) - Cognitive Radio - Adaptive Signal Processing

EDUCATION

Ph. D. in Multimedia and Telecommunications *ongoing*
 Rey Juan Carlos University of Madrid, Spain
 Thesis: Robust Graph Signal Processing
 Advisor: A. G. Marques (Rey Juan Carlos University)

M. Sc. in Telecommunications Eng. *2018*
 Rey Juan Carlos University of Madrid, Spain

Degree in Telecommunication Technology Eng. *2016*
 Rey Juan Carlos University of Madrid, Spain

PROFESSIONAL EXPERIENCE

Rey Juan Carlos University *Fuenlabrada, Madrid, Spain*
 Research and Teaching Assistant *June, 2018 - present*
 Dept. of Signal Theory and Communications

Rey Juan Carlos University *Fuenlabrada, Madrid, Spain*
 Laboratory technician *July 2016 - July 2018*
 Dept. of Signal Theory and Communications

Telefonica gCTO *Distrito Telefonica, Madrid, Spain*
 Internship on Mobile Devices Department *October 2015 - April 2016*

ACADEMIC HONORS

1st URJC Young Investigator Awards, modality B. December 2018.

Best 2017-18 Telecommunication Eng. (master) Student award (graduated with highest honors)

Scholarship FPU for Ph. D. studies. Announcement 2017.

Best 2015-16 Telecommunication Technology Eng. Student award (graduated with highest honors)

RESEARCH

PUBLICATIONS

Journal papers

1. S. Rey-Escudero, F. J. I. Garcia, C. Cabrera, and A. G. Marques, "Sampling and reconstruction of diffused sparse graph signals from successive local aggregations". *IEEE Signal Processing Letters*, 26(8), 1142-1146, 2019.

Conference papers

1. S. Rey, V. Temprano, S. Rozada, L. Martino, and A. G. Marques, "Overparametrized Deep Encoder-Decoder Schemes for Inputs and Outputs Defined over Graphs", *Proc. of 28th European Signal Processing Conference*, August 24-28, 2020 (submitted).
2. S. Rey, V. Temprano, S. Rozada, L. Martino, and A. G. Marques, "Deep Decoder-Encoder Architectures for Graph Output Signals", *Proc. of 53rd Asilomar Conf. on Signals, Systems, and Computers*, Pacific Grove, CA, Nov. 3-6, 2019.
3. A. Buciulea, S. Rey, C. Cabrera, and A. G. Marques, "Network reconstruction from graph-stationary signals with hidden variables", *Proc. of 53rd Asilomar Conf. on Signals, Systems, and Computers*, Pacific Grove, CA, Nov. 3-6, 2019.
4. S. Rey, A. G. Marques, and S. Segarra, "An Underparametrized Deep Decoder Architecture for Graph Signals". *Proc. of IEEE CAMSAP 2019*.
5. S. Segarra, A. G. Marques, S. Rey-Escudero, and M. Goyal "Network Topology Inference from Input-Output Diffusion Pairs", *Proc. of IEEE Statistical Signal Process. Wrksp.*, Freiburg, Germany, June 10-13, 2018.
6. F. J. Iglesias, S. Segarra, S. Rey-Escudero, A. G. Marques, and D. Ramirez "Demixing and Blind Deconvolution of Graph-diffused Sparse Signals", *Proc. of IEEE Intl. Conf. on Acoustics, Speech and Signal Process.*, Calgary, Canada, April 15-20, 2018.
7. A. G. Marques, S. Segarra and S. Rey, "Joint Inference of Multiple Networks from Stationary Graph Signals", *GSP Workshop 2017*.
8. S. Rey and JM Cañas, "VisualHFSM 5: recent improvements in programming robots with automata in JdeRobot", *WAF 2016*.

RESEARCH FUNDING

Public funding

Member of the working team of the following projects:

1. Procesamiento de señal para datos definidos sobre grafos: Aprovechando la estructura en dominios irregulares (SPGRAPH). 2020 - 2023.
2. Métodos de aprendizaje automático y visualización de datos clínicos para predecir la multirresistencia antimicrobiana en la unidad de cuidados intensivos (Mapping-UCI). 2020-2021.
3. Extracción de Conocimiento para Predicción de la Evolución Clínica usando Análisis de Datos (KLINILYCS). 2016 - 2020.
4. Optimización y monitorización robusta en redes de comunicaciones inteligentes (OMICRON). 2014 - 2018.

Private funding

Member of the research team of the following projects:

1. Operación y Control Remoto de vehículos Marinos de Superficie. 2016 - 2018.

TEACHING

UNDERGRADUATE COURSES

Laboratory of Complex Variable (2019, 2020).

Laboratory of Signals and Systems (2019, 2020).

GRADUATE COURSES

Laboratory of Electronic of Communications (2019).

SEMINARS/INVITED TALKS

Rey Juan Carlos University, Autonomous Vehicles (2016).