Tokyo University of Agriculture and Technology
Institute of Global Innovation Research

グローバルイノベーション研究院　公開セミナー
Institute of Global Innovation Research Open Seminar

LINE AI Talk

Friday, July 5 2019,19:25-21:05

【会場】LINE 株式会社
東京都新宿区新宿 4-1-6 JR 新宿ミライナタワー
受付 :5F

Program

19:25　Opening

19:30　農工大における AI 研究教育とグローバルイノベーション研究院の紹介　田中聡久教授（東京農工大学）

19:35 - 20:30

“Making sense of data on networks: a graph signal processing approach”

Dr. Antonio Ortega（特任教授、東京農工大学 グローバルイノベーション研究院 / Professor, University of Southern California U.S.A.）

As technology for sensing, computing and communicating continues to improve, we all are becoming increasingly reliant on a series of very large scale networks: the Internet, which connects computers and phones, as well as a rapidly growing number of devices and systems (the Internet of Things); large information networks such as the web or online social networks; even networks that have existed for decades (e.g., transportation or electrical networks) are now more complex and increasingly a focus of data-driven optimization. This trend is one of the key motivations for research in the emerging field of graph signal processing (GSP). GSP seeks to develop new methods to analyze graph signals, i.e., data associated to nodes in a network, using tools similar to those applied for processing of conventional signals, such as audio, speech or images. In this talk we provide an introduction to graph signal processing (GSP). We review notions of frequency can be applied to graph signals, then describe how these are used to develop filtering and sampling strategies. We then discuss recent advances in the development of GSP tools and illustrate them with applications in sensing, imaging and machine learning.

言語 / 英語　Language / English

Biography

Antonio Ortega received his undergraduate and doctoral degrees from the Universidad Politecnica de Madrid, Madrid, Spain and Columbia University, New York, NY, respectively. In 1994 he joined the Electrical Engineering department at the University of Southern California (USC), where he is currently a Professor and has served as Associate Chair. He is a Fellow of the IEEE and EURASIP, and a member of ACM and APSIPA. He is currently a member of the Board of Governors of the IEEE Signal Processing Society and the Editir-in-Chief of the IEEE Transactions on Signal and Information Processing over Networks.
He has received several paper awards, including the 2016 Signal Processing Magazine award. His recent research work is focusing on graph signal processing, machine learning, multimedia compression and wireless sensor networks.

20:30 - 20:35　休憩

20:35　ロバストインテリジェンス・ソーシャルテクノロジー研究センター紹介
戸田 真人（LINE 株式会社 Research Labs, 博士 (工学) ）

20:40 - 21:05

『深層学習を用いた複数マイクロホンの音源分離』
“ Multi-channel speech source separation with deep learning”

Dr. Masato Toda（LINE 株式会社 Research Labs）

近年の深層学習の進展に伴い、複数の音声が混ざった音を、音源毎に分離する、音源分離技術にも深層学習が取り込まれつつある。音源分離技術では、音声の周波数構造のモデルと、空間伝搬モデルとを如何に表現し、またそのパラメータを如何に学習するかがポイントとなる。本発表では深層学習の取り込み方の観点で、近年の音源分離技術の動向を特に複数マイクロホンを用いた技術にフォーカスし述べると共に、LINE における研究状況を説明する。

言語 / 日本語　Language / Japanese

略歴

2016/9 まで日立製作所中央研究所の音声音響信号処理ユニットのユニットリーダー主任研究員として、対話ロボット、テレビ会議システム向けの音響信号処理の研究開発・チームリーディング。その後、2018/5 までシリコンバレーの日立アメリカの ラボに所属し Stanford 大学 Stanford Data Science Initiative の Visiting Scholar。2018/6 より LINE Research Labs/Senior Researcher。15 年以上に渡り音声・音響信号処理の研究開発に従事。IEEE Senior Member。

21:10 - 22:30　懇親会

■共催 / Co-Organized by
グローバルイノベーション研究院 ライフサイエンス分野 田中研究チーム
Institute of Global Innovation “Life Science” Tanaka Team

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