JLCPTS 2016

Workshop of the Speech Communication and Signal Processing Lab

Université des Sciences et de la Technologie Houari Boumediene

3rd Workshop of the Speech Communication and Signal Processing Lab.

3èmes Journées du Laboratoire de Communication Parlée et de Traitement duSignal

JLCPTS2016

December 05, 2016

Words of the Director / Message du Directeur

Prof. Bachir BOUDRAA

Le laboratoire de communication parlée et de traitement des signaux (LCPTS) a été créé en 2000. Jusqu'à l'année 2015, LCPTS était constitué de quatre équipes: production de la parole, reconnaissance de la parole, codage de la parole et traitement du signal.

LCPTS fut dirigé pendant neuf années par le Professeur Amar Djeradi. Il fut ensuite dirigé par le Professeur Debyeche Mohamed, durant trois ans. J'ai eu l'honneur de prendre la relève à partir de 2012. Durant ses seize années d'existence, le LCPTS a formé plusieurs docteurs d'état, plusieurs docteurs d'université et récemment des docteurs troisième cycle (LMD). Plusieurs étudiants ingénieurs, masters et licenciés ont aussi effectué leurs projets de fin d'études au LCPTS. En 2015, l'effectif du laboratoire dépassait 120 chercheurs. Ce nombre important a conduit naturellement à une restructuration du LCPTS. D'abord, un nouveau laboratoire est né, composé dans sa majorité par des chercheurs du LCPTS. L'effectif restant s'est réorganisé en six équipes: Recherche vocale et applications (RVA), Analyse et codage des signaux (ACS), Parole et Communication Personne Système (PCPS), Traitement des signaux (TS), Technologies d'Interfaces Avancées en Communication Verbale Palliative, Applications en Télécommunications (TICVP), Exploration de Données Textuelles pour des applications audio et multimédia (EDT).Aujourd'hui, au total 90 chercheurs fréquentent ces six équipes. Cette composante est formée de 17 professeurs et maitres de conférences, de 12 maîtres assistants et 61 doctorants. Ce sont ces chercheurs qui participent aujourd'hui à l'organisation de cette manifestation scientifique (3ème JLCPTS 2016).

Ces 3èmes journées, se dérouleront au cyberespace le 05 décembre 2016 et vont être un espace de rencontre, d'expression et de débats scientifiques pour une centaine de chercheurs du LCPTS associant des chercheurs d'autres laboratoires. Les thèmes concernés par ces deux journées sont divers et variés et relèvent à la fois d'aspects fondamentaux et également de recherche appliquée. Ils couvrent des domaines en communication parlée et en traitement des signaux, tels que: les télécommunications, le codage et la sécurité, la synthèse, le dialogue homme-machine, la reconnaissance de la parole et du locuteur, l'identification, la classification, la pathologie de la voix, ...

Des conférences plénières sont également prévues et seront présentées par des spécialistes en télécommunication et en traitement du signal. Les autres présentations auront lieu sous forme de communications orales et de posters.

Je voudrais exprimer ici mes vifs remerciements aux membres du comité de programme pour avoir examiné les articles et pour avoir prodigués des conseils à nos doctorants, leur permettant d'améliorer leurs travaux.

Je remercie aussi tous les membres du comité d'organisation pour le temps qu'ils ont consacré à la préparation de ces journées. Leur seul souci était la réussite des JLCPTS-2016.

Welcome to participants / Mot de bienvenue

Dear Workshop participants, dear colleagues, dear friends,

It is a great opportunity for us to organize this fabulous workshop inside our University and present the latest research areas of the LCPTS laboratory.

I would like to thank all the participants, the organizing committee members, the scientific committee members and all the colleagues of the faculty of Electronics and Informatics who helped us making this workshop a nice scientific event.

Thank you for your participation, Thank you for your help, and Thank you for coming.

The Organizing Committee Chairman

Prof Halim Sayoud
Head of the EDT Research Team
http://scholarpage.org/sayoud.html

Pr H.Sayoud

Organizing Committe / Comité d'organisation

President of the organizing committee: Pr H. Sayoud

- D. Addou
- A. Archi
- N. Boudia
- F. Z. Chellali
- L. Demri
- A. Djeradi
- R. Djeradi
- L. Falek
- F. Farah
- A. Halilali
- Z. Hamadache
- M. Hemis
- A. Houacine
- F. Karaoui
- S. Khennouf
- A. Krobba
- S. Mekkaoui
- T. Meksen
- H. Teffahi
- S.Cheraitia
- F.Zaidi
- KY.Zergat

Program Committee / Comité de programme

President of the scientific Committee

- Pr Amrouche Abderrahmane
- Dr Addou Djamel
- Pr Boudraa Bachir
- Pr Boudraa Malika
- Pr Bouzid Merouane
- Dr Chelali Fatma Zohra
- Pr Djeradi Amar
- Dr Djeradi Rachida
- Pr Debyeche Mohamed
- Dr Droua Ghanai
- Pr Falek Leila
- Pr Mekaoui Slimane
- Dr Merazi Meksen Thouraya
- Pr Ouamour-Sayoud Siham
- Pr Sayoud Halim
- Pr Selouani Sid Ahmed
- Pr Teffahi Hocine

Monday / Lundi - December05, 2016

Time	Event			
07h30-09h00	Welcoming participants / Accueil des participants (Amphithéâtre)			
09h00-09h45	*Opening ceremony / Cérémonie d'ouverture* (Amphithéâtre)			
	Pr. M. Saidi : Speech of the University Chancellor / Allocution du Recteur de l'Université (Amphithéâtre)			
	Pr. Z. Ali Mazighi : Speech of the Faculty Dean / Allocution de la Doyenne de la Faculté (Amphithéâtre)			
	Words of the Organizing committee members / Discours des membres du comité d'organisation (Amphithéâtre)			
09h45 – 10h00	 Coffee break / Pause-café			
10h00 – 11h00	Plenary Session1:Novel Trends to Computational (a.k.a. Artificial) Intelligence via Deep Learning Paradigms (Amphithéâtre) Prof Djamel Bouchaffra President: Pr H.Sayoud Co-President: Dr FZ. Chelali			
11h00 – 12h00	Plenary Session 2:Coherence Multiplexing Technique for Real-time all Optical Signal Processing and Encryption (Amphithéâtre) Prof. Badr-Eddine Benkelfat President: Pr A. Houacine Co-President: Pr S. Mekaoui			
12h00 – 13h15				
13h15 – 13h45	*Poster Session 1 : ID02, ID32,ID04,ID06, ID7,ID09,ID10, ID12,ID14,ID16, ID19, ID20,ID21,ID22,ID24* President: R. DJERADI Co-President: G. DROUA			
13h45 – 15h45	*Oral Session 1:Speech Analysis, Synthesis and Recognition* (Salle de Réunion) ID13, ID03, ID35, ID37, ID38, ID40		*Oral Session 2 :Signal, Data mining and Telecommunications* (Amphithéâtre) ID05, ID08, ID15, ID17; ID18, ID23	
	Presidents : Mr TEFFAHI, A.DJERADI ,	Co-Presidents : L. Falek, M. Debyeche	Presidents: M. Boudraa ; A. Amrouche	Co-Presidents: S. Ouamour, M. Bouzid
15h45 – 16h00	 Coffee break / Pause-café			
16h00 – 16h30	*Poster Session 2: ID25,ID26, ID27,ID28, ID29, ID30, ID31, ID33, ID34, ID36, ID39, ID41, ID42, ID43* President: T. MEKSEN Co-President: D.ADDOU			
16h30 : 17h00	*Closing ceremony* (Amphithéâtre)			

Plenary Session 1: Novel Trends to Computational (a.k.a. Artificial) Intelligence via Deep Learning Paradigms

Dr. Djamel Bouchaffra (www.djamelbouchaffra.com) is currently a Director of Research at the Center for Development of Advanced Technologies (aka CDTA). He is the Head of the ASM Division and the principal lead of the Pattern Recognition and Machine Intelligence team. After graduating in Mathematics from the University Houari Boumediene (USTHB), he left for Grenoble where he received his DEA in Mathematics and Computer Science and his Ph.D. in Computer Science. He has taught courses in these fields at Joseph Fourier University for several years. He later left for Montréal (Canada) for a one-year postdoctoral position. He then held a position of Senior Research Scientist at the "Center of Excellence for Document Analysis and Recognition" (CEDAR) located at The State University of New York at Buffalo, USA. He was a research director for different research groups and a technical lead in several federally sponsored projects.

Dr. Bouchaffra left CEDAR and then joined Oakland University, Michigan (USA) as Assistant Professor. He was teaching a wide spectrum of courses including machine learning and pattern recognition, artificial intelligence, computer vision, soft computing and discrete mathematics. He has been selected as the recipient of the Oakland University Teaching Excellence Award for 2004 (awardees) as well as the recipient of the School of Engineering Teaching Excellence Award. He later joined Louisiana University (GSU) in which he held a rank of Professor in the Computer Science and Mathematics Department. He was nominated for excellence in teaching several years.

He is currently working on “Expression of Intelligence in Deep Machine Learning”. His areas of expertise include Pattern Recognition and Machine Learning, Computational Intelligence, Big-Data Mining, Data Science. He has been involved in other areas such as Brain Machine Interface, Remote Sensing, Biometrics, Handwriting Recognition, Language Modeling, Speech Recognition, and Bioinformatics.

Dr. Bouchaffra has written several papers in peer-reviewed conferences and premier journals. He chaired several sessions in conferences, he was one of the general chairs of the IEEE conference ICSIT'05 held in Algiers. He also served as a Vice Chair at the 9th International Workshop on Systems, Signal Processing and their Applications (WoSSPA'13). Prof. Bouchaffra is among the reviewer panel of some governmental funding agencies such as NASA (ADP Program: Data Analysis and Astrophysics) and The UK Engineering and Physical Sciences Research Council (EPSRC). He is also a regular reviewer for several journals such as IEEE TPAMI, TNN, TKDE, and Image Processing.He was the lead guest editor of in special issues of Pattern Recognition journal (Elsevier) such as "Machine Learning and Pattern Recognition Models for Change Detection " as well as: “Feature Generation and Machine Learning for Robust Multimodal Biometrics". He was an "invited Professor" by University Paris 13 (Laboratoire d'Informatique de Paris-Nord UMR CNRS 7030) for the summer 2010 and 2011. Professor Bouchaffra is an Editorial Board Member in several journals (including "Pattern Recognition" published by Elsevier). He is an IEEE Senior Member and is listed in the prestigious Marquis Who's Who in America, and Marquis Who's Who in Engineering and Science. Dr. Bouchaffra is a founding member of the Algerian Academy of Science and Technology (http://www.aast.dz/).

Prof. D. Bouchaffra

Abstract

We begin by introducing a traditional approach to computational intelligence and its various domains of application. The pros and cons of this conventional view will be outlined. We follow up by covering the traditional connectionist approach to intelligence as well as its backpropagation learning scheme. A comparison between the anthropocentric cognitive scheme and the ecocentric one will be conducted. Among other systems that exhibit intelligence, deep machine learning (DML) formalism as part of an anthropocentric view will be explored. Different perceptions to the information flow and management during pretraining, classification and regression will be covered. Likewise, the advantages and limitations of these learning models will be laid out.

Plenary Session 2: **Coherence multiplexing technique for real-time all optical signal processing and encryption**

Abstract

We present the use of the well-known *coherence modulation of light* approach to achieve real-time all optical arithmetic operations dedicated to signal processing and encryption. Compared to other conventional optical modulation methods, this technique allows multiplexing several signals on a single light beam. It has readily been implemented in a wide range of applications, including optical sensing, acousto-optic signal processing,...

We will discuss its performance in terms of noise level as a function of the continuous Optical Path-Difference Ratio (OPDR) and Peak-to-Correlation Energy (PCE).

Keywords: Coherence; Birefringence; Analog optical image processing

Prof. Badr-Eddine BENKELFAT

Biography

Badr-Eddine BENKELFAT received Master and PhD degrees in Optics and Signal processing from the University of Franche-Comté, Besançon, France, in 1981 and 1984 respectively. In 1990, he joined the Institut Mines-Telecom – Telecom Sud Paris (formerly called INT) as an associate professor and founded the 'Optics and Photonics Group'. He presently holds apposition as a Professor and is currently head of the Electronics and Physics Department. His research interest includes optoelectronic systems for optical signal processing and optical devices for high-speed optical fiber communications. He has published over 100 papers in international journals and conferences, and has supervised over 15 PhD students.

Summary

Oral Session 1: Speech Analysis, Synthesis and Recognition

Oral Session 2: Signal, Data mining and Telecommunications

Poster Session 1:

Poster Session 2: