

Lettre Mode, Octobre 2019

Chères et chers collègues,

En tant que nouveau responsable du groupe SMAI-MODE c'est un plaisir pour moi d'écrire ces quelques lignes pour vous souhaiter (conformément à la tradition de la rentrée, même si avec un peu de retard) un début d'année universitaire qui soit optimal à tous les points de vue.

C'est le moment de féliciter les lauréats des prix d'optimisation parrainés par le groupe : les deux lauréats du prix de thèse PGMO 2019 Charles Bertucci et Cécile Rottner, ainsi que le lauréat de la première édition du prix Jean-Jacques Moreau, récemment lancé par la SMAI, la SMF, et l'Académie des Sciences pour récompenser un chercheur de la communauté française d'optimisation. Le jury, présidé par Hélène Frankowska, a décerné ce prix à Francis Bach, que nous félicitons de tout coeur.

C'est aussi le moment de rappeler les événements qui bientôt auront lieu dans notre communauté et autour du groupe MODE, comme les PGMO Days 2019 ou les journées SMAI-MODE 2020 (précédées par un mini-cours organisé par le GDR MOA), ces deux colloques ayant lieu tous les deux dans les locaux d'EDF-Lab sur le plateau de Saclay. Début décembre, une conférence internationale en mémoire de Michel Balinski aura aussi lieu au CNRS. Nous saluons également le succès des événements passés, comme la French-German-Swiss conference on optimization qui a eu lieu à Nice en septembre ou les journées annuelles du GDR MOA qui viennent de s'achever à Rennes.

Avant de vous laisser à la lecture de la lettre MODE de ce mois-ci, où vous trouverez davantage d'information sur les événements, les postes, les séminaires, et la vie de la communauté, un dernier mot pour féliciter les collègues optimiseurs qui viennent d'être recrutés comme professeurs, maître de conférences ou chercheurs, ainsi que les étudiants qui rejoignent ce monde en commençant une thèse ou un master dans les domaines de l'optimisation et des mathématiques de la décision.

Filippo Santambrogio

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Inscription et désinscription

Ecrire à lettre-mode-smai-request@emath.fr, en mettant suivant le cas subscribe ou unsubscribe dans l'objet.

Contributions

Envoyez vos contributions en format simple texte en remplissant le formulaire à l'adresse suivante :

<http://www.lettremode.ovh>,

ou par mail à l'adresse suivante :

contact@lettremode.ovh. Prière d'indiquer "pour la lettre MODE" dans l'objet du mail.

Site officiel et twitter SMAI-MODE

<http://smi.emath.fr/spip.php?article330>

https://twitter.com/smai_mode

1) Assistant/Associate Professor in Optimal Control of Thermofluids Networks

De : olivier cots

Lien : <https://polytechnicpositions.com/assistantassociate-professor-in-optimal-control-of-thermofluids-networks,i3773.html>

Assistant/Associate Professor in Optimal Control of Thermofluids Networks
Delft University of Technology
Netherlands

Department/faculty: Faculty Mechanical, Maritime and Materials Engineering

Level: Doctorate

Working hours: 32-38 hours weekly

Contract: Tenure Track
Salary: 3637 - 6738 euros monthly (full-time basis)
Faculty Mechanical, Maritime and Materials Engineering

Preferred expertise includes (but is not limited to) the following topics:

- Model reduction, optimization, control, and monitoring of nonlinear distributed parameter systems
- Stabilization, delay compensation, and control of infinite-dimensional systems modelled by coupled/networked PDEs
- Real-time optimization by extremum seeking control
- Fluid/thermal flow dynamics, instabilities, fluid networks, magneto-hydrodynamics
- Applications of novel approaches in control/modeling of turbulent fluid flow and heat transfer, topology design and optimal control of heat networks, multiscale process systems.

Requirements

The successful candidate has the following qualifications:

- An Ph.D. degree in systems and control, applied mathematics, mechanical engineering, electrical engineering or a related field.
- Fundamental knowledge of control systems theory and/or system identification.
- The capacity to communicate effectively with peers, students and stakeholders in the application field
- An excellent track record in scientific publications, acquisition and management of externally funded research projects, and a clear view on required future developments, aiming at a high degree of sustainability in the application field, and have experience as a post-doctoral researcher.
- Fluency in English and the willingness to learn Dutch within three years.
- An open personality and good communication skills in written and spoken English.

The application deadline is January 1, 2020.

2) Contrato predoctoral de 4 años, Universidad de Alicante, análisis variacional

De : Michel Thera

OFERTA: Contrato predoctoral de 4 años (o 3 años predoctorales + 1 año postdoctoral)

Lugar de trabajo:

Universidad de Alicante. Departamento de Matemáticas.

Próximamente se ofertará un contrato predoctoral FPI de 4 años de duración, con la posibilidad de realizar un periodo de orientación postdoctoral de un año de duración si el título de doctor es obtenido con antelación al inicio de la última anualidad de la ayuda.

El contrato está vinculado al proyecto "Contribuciones al análisis variacional: fundamentos, dualidad, robustez y algoritmos" (PGC2018-097960-B-C22), cuyas

líneas principales de investigación son:

1. Convexidad y sus aplicaciones: Conjuntos y funciones convexas y even convexas, cálculo subdiferencial, y polinomios exponenciales.
2. Dualidad en optimización infinita: Dualidad fuerte, estable, robusta y total.
3. Estabilidad cuantitativa lineal, convexa, y optimización disyuntiva: Linearización de funciones semi-Lipschitz.
4. Optimización bajo incertidumbre: Existencia de soluciones robustas.
5. Métodos de numéricos: Métodos iterativos para problemas de optimización y punto fijo, aplicaciones y la metodología de la superiorización.
6. Aplicaciones de la optimización: Optimización cónica lineal y aproximación funcional.

Perfil del candidato:

Se requiere el Grado y Máster en Matemáticas, preferiblemente con conocimientos de programación en Python. El candidato realizará su actividad investigadora en teoría y algoritmos de optimización, principalmente en los Objetivos 5 y 6 del proyecto.

Los candidatos interesados en participar en dicho concurso público pueden ponerse en contacto con Francisco Aragón Artacho en la dirección de correo francisco.aragon@ua.es.

3) PhD on Data-driven Game-theoretic Control for Complex Systems of Systems

De : olivier cots

Lien : <https://polytechnicpositions.com/phd-on-data-driven-game-theoretic-control-for-complex-systems-of-systems,i3768.html>

PhD on Data-driven Game-theoretic Control for Complex Systems of Systems
Delft University of Technology
Netherlands

Department/faculty: Faculty Mechanical, Maritime and Materials Engineering

Level: University Graduate

Working hours: 38.0 hours weekly

Contract: temporary

Salary: 2266 - 2897 euros monthly (full-time basis)

Faculty Mechanical, Maritime and Materials Engineering

Job description

We are looking for a talented, outstanding PhD candidate with an M.Sc. degree (or close to completion) in Systems and Control, or Applied Mathematics, Electrical or Mechanical Engineering, or related field, with theoretical background and/or interest in System Theory, Automatic Control, Optimization, Game Theory, and with good command of the English language (knowledge of Dutch is not required).

The candidate will conduct theoretical and algorithmic research on complex multi-agent systems populated by strategic agents. The research will develop and build upon tools from game theory, monotone and fixed-point operator theory and deep learning. The main application areas are distributed control for smart power grids and multi-vehicle automated driving.

The position is in the context of the research project "Game theoretic Control for Complex Systems of Systems" (COSMOS), funded by the European Research Council as ERC Starting Grant.

Requirements

The candidates should possess or be close to completing an M.Sc. degree in Systems and Control, or Applied Mathematics, Electrical or Mechanical or Aerospace Engineering, or related field, with good command of the English language (knowledge of Dutch is not required).

4) Position for a professor in Computer Science/Mathematics, Deakin University

De : Michel Thera

Lien : <http://careers.deakin.edu.au/cw/en/job/495492/professor-in-computer-sciencemathematics>

Deakin University is advertising a position for a professor in Computer Science/ Mathematics:

<http://careers.deakin.edu.au/cw/en/job/495492/professor-in-computer-sciencemathematics>

5) PostDoc on Data-driven Game-theoretic Control for Complex Systems of Systems

De : olivier cots

Lien : <https://polytechnicpositions.com/postdoc-on-data-driven-game-theoretic-control-for-complex-systems-of-systems,i3767.html>

PostDoc on Data-driven Game-theoretic Control for Complex Systems of Systems
Delft University of Technology
Netherlands

Department/faculty: Faculty Mechanical, Maritime and Materials Engineering

Level: Doctorate

Working hours: 38.0 hours weekly

Contract: temporary

Salary: 3255 - 4274 euros monthly (full-time basis)

Faculty Mechanical, Maritime and Materials Engineering

Job description

We are looking for a talented, outstanding PostDoc researcher with a PhD degree (or close to completion) in Systems and Control, or Applied Mathematics, Electrical or Mechanical Engineering, or related field, with theoretical background and/or interest in System Theory, Automatic Control, Optimization, Game Theory, and with good command of the English language (knowledge of Dutch is not required).

General project description: The candidate will conduct theoretical and algorithmic research on complex multi-agent systems populated by strategic agents. The research will develop and build upon tools from game theory, monotone and fixed-point operator theory and deep learning. The main application areas are distributed control for smart power grids and multi-vehicle automated driving.

The position is in the context of the research project “Game theoretic Control for Complex Systems of Systems” (COSMOS), funded by the European Research Council as ERC Starting Grant.

Requirements

We are looking for a talented, outstanding research fellow with a PhD degree (or close to completion) in Systems and Control, or Applied Mathematics, Electrical or Mechanical Engineering, or related field, with theoretical background and interest in System Theory, Automatic Control, Optimization, Game Theory, and with good command of the English language (knowledge of Dutch is not required). Expertise in mixed-integer optimization is appreciated.

6) Annonces de séminaires

Une rubrique pour signaler quelques liens pour les séminaires ayant lieu ce mois-ci et organisés dans nos laboratoires.

N'hésitez pas à l'alimenter, préférentiellement via un lien vers la page du séminaire. Pour cela, envoyez un mail à l'adresse contact@lettremode.ovh.

- Séminaire Parisien d'Optimisation (IHP)
<https://sites.google.com/site/spoihp/>
- Séminaire du programme PGMO
<https://www.fondation-hadamard.fr/fr/pgmo-seminars/seminars>
- Groupe de Travail CalVa de Calcul de Variations (suivant les séances (lieu : voir site) :
<https://www.ljll.math.upmc.fr/fr/seminaires/article/gdt-calcul-des-variations>
- Groupe de Travail Analyse Non-linéaire et EDP (ENS et UPMC)
http://www.math.ens.fr/-Seminaires-?id_seminaire=14

- Séminaire Pluridisciplinaire d'Optimisation de Toulouse (lieu : voir site)
<http://projects.laas.fr/spot/>
- Séminaire SAMOCOD (séminaire Avignon Montpellier Optimisation Contrôle et Dynamique)
http://www.i3m.univ-montp2.fr/index.php?option=com_content&view=article&id=59&catid=19&sem=618
- Séminaire hebdomadaire de l'équipe MOD de l'Université de Limoges
<https://indico.math.cnrs.fr/categoryDisplay.py?categId=36>
- Séminaire Parisien de Théorie des Jeux (IHP, salle 05, 201 ou 314)
<https://sites.google.com/site/theoriesdesjeux/>
- Séminaire de Mathématiques Discrètes, Optimisation et Décision, Centre d'Economie de la Sorbonne et Université Paris 1
<http://ces.univ-paris1.fr/membre/seminaire/MDOD/>
- Séminaire de géométrie sous-riemannienne - IHP
<http://webusers.imj-prg.fr/~davide.barilari/seminar.php>
- Séminaire de l'équipe Statistique, Probabilités, Optimisation et Contrôle (SPOC) - IMB
<https://math.u-bourgogne.fr/spip.php?page=seminairespoc>

7) International Conference for Michel Balinski, 3-4 of December 2019

De : Rida Laraki

Lien : <https://tombalinski.sciencesconf.org>

The 3rd and 4th of December 2019, with the CNRS and the Ecole Polytechnique, we are organizing an International Conference on Mathematical Optimization for Fair Social Decisions: A tribute to Michel Balinski

We invite you to attend and complete the registration form, which is free but mandatory (according to the CNRS rules, only registered people can have access).

REGISTRATION: <https://tombalinski.sciencesconf.org/registration>

SPEAKERS: Louis Billera (Cornell), Felix Brandt (Munich), Yann Brenier (ENS), Roberto Cominetti (Santiago), Alessandra Casella (Columbia), José Correa (Santiago), Gabrielle Demange (EHESS), Pradeep Dubey (Stony Brook), Curtis Eaves (Stanford), Edith Elkind (Oxford), Jon Lee (Michigan), Eric Maskin (Harvard), Claire Mathieu (ENS), Iain McLean (Oxford), Hervé Moulin (Glasgow), Vincent Pons (Harvard), Friedrich Pukelsheim (Augsburg), Chloé Ridet (Mieux Voter), Gautier Stauffer (Kedges), Clemens Puppe (Karlsruhe), John Weymark (Vanderbilt), Peyton Young (Oxford)

SCIENTIFIC COMMITTEE

Honorary members: Robert Aumann, Ralph Gomory

Executive members: Alfred Auslender, Jamal Atif, Mourad Baïou, Rafael Correa, Françoise Forges, Claude Henry, Francis Kramarz, Rida Laraki, Jean-Pierre Ponsard, Sylvain Sorin

ORGANIZATION COMMITTEE

Mourad Baïou (co-chair), Béatrice Bourdieu, Mokrane Bouzeghoub, Denis Cornaz, Olga Gorelkina, Yukio Koriyama, Rida Laraki (co-chair), Matias Nunez , Christina Pawlowitsch

SPONSORS

CNRS INS2I, Ecole Polytechnique, Labex ECODEC, LAMSADE, LIMOS, GDR JEUX, GDR RO, GDR MOA, PGMO

8) Julia day at Jussieu : Friday 13/12/19

De : Vincent Leclere

Lien : <https://michael-herbst.com/teaching/2019-julia-day-jussieu/>

Julia day (programming language) at Jussieu.

Friday 13th of December.

As you might know, Julia is a comparatively recent programming language, which is high level, but still fast. Similar to MATLAB or python with numpy, this makes it a great language for mathematically-driven developments in scientific computing. The idea of the day is to introduce Julia, Julia development and our Julia project, the density-functional tool kit (DFTK). The intended schedule is:

09:00 -- 12:00 Introduction to basic Julia: Multiple dispatch, control structures, matrices and linear algebra

12:00 -- 14:00 Lunch break

14:00 -- 15:30 Noteworthy Julia packages and their use in DFTK

15:30 -- 16:30 Introduction to DFTK (EMC2 seminar)

There is no reason to feel obliged to attend the full day. People only interested in getting an idea of Julia, but not DFTK could e.g. only attend the first session. The second session will be more specific to electronic structure theory and mathematical approaches to the relevant problems, so non-linear solvers, iterative solvers for eigenproblems. I'll be flexible in this second session and if you want something specific to be discussed, please get in touch. The talk in the final hour will be summarising DFTK and does not require attending any of the previous sessions.

I plan to present Julia interactively using Jupyter notebooks, perhaps a

few short exercises to give you the chance to try Julia directly in the sessions and play with my lecture material as we go along. If you want take advantage of this, you should have a working Julia installation before the first session of the day, including the IJulia package. See <https://github.com/JuliaLang/IJulia.jl#installation> for some instructions to achieve this.

For more detailed, up-to-date information about the course (including the final date and my notebooks and slides) see my website: <https://michael-herbst.com/teaching/2019-julia-day-jussieu/>.

9) Le mois de l'optimisation à Limoges

De : Loïc Bourdin
Lien : <http://lemoisde.xlim.fr/>

Cher(e)s collègues,

Avec le soutien des GDR-CNRS « MOA : Mathématiques de l'Optimisation et Applications », « MIA : Mathématiques de l'Imagerie et de ses Applications », le programme Gaspard-Monge pour l'optimisation, l'académie de Limoges et le laboratoire xlim, nous organisons le mois de l'optimisation à Limoges. Il s'agit d'un cycle de 4 conférences autour de l'optimisation et de ses applications :

- La première conférence intitulée : «L'optimisation à travers l'histoire : son évolution et son développement » aura lieu le 07 novembre 2019 à la BFM (Salle de conférences).

- La seconde conférence intitulée : «Optimiser la forme » sera donnée par le Professeur Antoine Henrot du l'Université de Lorraine. Elle aura lieu le 14 novembre 2019 à la BFM (Salle de conférences).

- La troisième conférence intitulée : «Tout est sous contrôle : les mathématiques optimisent le quotidien» sera donnée par le Professeur Emmanuel Trélat de la Sorbonne Université. Elle aura lieu le 21 novembre 2019 à la BFM (Salle de conférences).

- la quatrième conférence intitulée : «Optimisation et apprentissage » sera donnée par le Professeur Stéphane Canu du l'INSA de Rouen. Elle aura lieu le 28 novembre 2019 à la salle de cinéma du carrefour des étudiants.

Pour plus d'informations : <http://lemoisde.xlim.fr>

10) Mathematical and Scientific Machine Learning 2020 in Princeton, July 15-17, 2020

De : Michel Thera
Lien : <http://msml-conf.org>

Call for paper submissions

Mathematical and Scientific Machine Learning (MSML) 2020 in Princeton, NJ, July 15-17, 2020
<http://msml-conf.org/>

The Mathematical and Scientific Machine Learning (MSML) conference is a newly established conference, with emphasis on promoting the study of mathematical theory and algorithms of machine learning, and applications of machine learning in more traditional scientific and engineering disciplines.

This conference aims to bring together the communities of machine learning, applied mathematics, and computational science and engineering, to exchange ideas and progress in this fast growing field.

The inaugural MSML 2020 conference will be held July 15-17, 2020 at Princeton University, Princeton, NJ, hosted by the Program in Applied and Computational Mathematics.

It is our privilege to encourage researchers from academia, national and R&D labs, and/or industry to submit papers to the conference. We welcome paper submissions from all areas of machine learning. The important dates are:

Submission deadline: November 30, 2019

Review deadline: February 14, 2020

Rebuttal deadline: February 29, 2020

Decision timeline: March 15, 2020

Further details regarding paper submission can be found at
<http://www.smartchair.org/hp/MSML2020/Paper/>

The MSML 2020 conference co-chairs:
Jianfeng Lu, Duke University
Rachel Ward, University of Texas at Austin

11) SIAM Conference on Optimization (OP20), May 26-29, 2020, Hong Kong

De : Michel Thera
Lien : <https://www.polyu.edu.hk/ama/events/conference/op20/en/>

The minisymposium proposal call for presentations for the SIAM Conference on Optimization (OP20) is now open! Submissions for contributed lectures, poster and minisymposium abstracts will open in mid-November.

Conference: SIAM Conference on Optimization (OP20)

Sponsored by the SIAM Activity Group on Optimization

Location:

The Hong Kong Polytechnic University
Hung Hom Campus, Hong Kong

Dates: May 26-29, 2020

The Call for Presentations for this conference is available [here](#).

Submission Deadlines:

November 7, 2019: Minisymposium Proposal Submissions

December 1, 2019: Contributed Lecture, Poster and Minisymposium Presentation
Abstracts

Travel Fund Application Deadline:

December 12, 2019

Please visit the [Submission and Deadlines](#) page for detailed submission information.

Organizing Committee Co-Chairs:

Tamás Terlaky, Lehigh University, USA

Defeng Sun, The Hong Kong Polytechnic University, Hong Kong

Organizing Committee Members:

Xiaodong Hu, Chinese Academy of Sciences, China

Adil Bagirov, Federation University, Australia

Akiko Yoshise, University of Tsukuba, Japan

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Henry Wolkowicz, University of Waterloo, Canada

Uday Shanbhag, Penn State University, USA

Genetha Gray, Salesforce, USA

Pietro Belotti, FICO, UK

#SIAMOP20

For additional information, contact Natalie Cheung.

12) Zinal Winter School in Data Science and OR

De : vincent leclere

Lien : <http://transp-or.epfl.ch/zinal/>

The next Winter School in Data Science, Optimization and Operations Research will take place in Zinal, January 19-24, 2020.

We have the great opportunity to have two outstanding persons:

- Negar Kiyavash, who very recently joined EPFL, will talk about “Network Causal Inference”.
- Marco Campi, from the University of Brescia, will talk about "Data-driven decision-making”.

If you are interested to attend, please register on line.

Michel Bierlaire

Fin de la lettre MODE
