MARK ASCH

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Profile

An academic with international experience in scientific and innovation strategy, around HPC, Big Data, AI, high-level management and advisory positions related to next generation cyber-infrastructures.

My academic career has been rich and varied, with posts of responsibility at department and university levels and strategy elaboration and management (science and innovation) at national (France) and European levels in large research organisations and in government. Throughout my career I have been in close contact with industry, as advisor, collaborator and research partner. Recently, as scientific advisor to corporate R&d at Total, I elaborated a 5 year roadmap for Data Science, AI and coupling with CSE.

Professional Experience

Scientific Advisor, TOTAL SA — 2017-2019

Advising the R&D management board (corporate, La Défense). Elaboration of a roadmap for coupling Data Science, Artificial Intelligence and Computational Science and Engineering. Follow up of research chairs, theses and internships.

Program Manager, ANR[1] — 2015-2016

Responsable at the French National Research Funding Agency (ANR) for formulating and running national calls for proposals and funding in the domains of Mathematics, Computer Science, HPC and Big Data.

Scientific Advisor, Ministry of Research — 2012-2015

National and European strategy for data, e-infrastructures and mathematics.
Official representative of France in national, European and international instances for HPC and Data: GENCI, PRACE, e-IRG, G8-WG on Data Infrastructures, ESFRI, RDA.
Executive Board member of: IHES, IHP, CIRM, CINES, CIMPA, IDRIS, RENATER, GENCI.

Scientific Officer, CNRS — 2010-2012

In Mathematics Institute: responsible for scientific computing.
In Interdisciplinary Mission: organiser of 5-yr big data challenge, MASTODONS.
In Strategic Committee for Intensive Computing: CNRS-wide strategy for computing and data.

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[1] Please consult the Glossary (at the end of this document) for all acronyms.

Prof. of Mathematics, Amiens University — 2003-Present
Vice-president for Research (2005-8). Director of regional supercomputing center (2008-12) Lecturing in Machine Learning, Statistics, Data Analysis, Numerical Analysis at graduate level.Research in Inverse Problems and Data Assimilation.

Prof. of Mathematics, Toulon University — 2001-2003
Director of Mathematical Engineering department.
Director of research lab "Numerical Modelling and Couplings"

Asst. Prof. of Mathematics, U. of Paris -Orsay — 1991-2001
Lecturing in Computational Statistics, Numerical Analysis, Optimal control at undergraduate and graduate levels. Research in wave propagation and control.

Postdoctoral Fellow, INRIA and Inst. Advanced Studies — 1990-1991
Wave propagation in random media.

Industrial Consultant, Bercom (Haifa) and Hutchinson (Paris) — 1984-1986
Finite-element analysis and optimisation.

Management Experience
Management Board - Toulon University — 2001-2003
General management of the Engineering School. General strategy and day-to-day operation of the school.

Department Director - Toulon University — 2001-2003
Director of Engineering Mathematics department. Recruiting and management of a team of 8 persons. Education, research and industrial strategy management for the department.

Vice-President - Amiens University — 2005-2008
Vice-president for Research (2005-8): Elaboration of university -wide research strategy for 4-yr contract. Management of university Research & Transfer Department (jurists, economists, engineers). Annual interviews for evaluation of the careers of staff. Organisation of scientific councils.

Director Computing Center - Amiens University — 2008-2012
Financial set-up of a supercomputing center. Management of FEDER and ANR funding streams. Daily running of the center with the assistance of 2 technicians. Scientific strategy and training.

Education
University of Witwatersrand — Mech. Eng., 1974-1976
Hebrew U. of Jerusalem - B.Sc. Agronomy, 1982
Hebrew U. of Jerusalem - M.Sc. Applied Physics, 1984
New York University - M.S. Mathematics, 1988
New York University - Ph.D. Mathematics, 1990

Skills

A wide range of skills ranging from academic, managerial to industrial.

Scientific Strategy and Policy-making for cyber-infrastructures (computing + big data + network/cloud).

Excellent familiarity with the ERA (European Research Area) Expert for ERAC..

Negotiation with the European Commission and Member States on the subject of HPC infrastructure policy.

Open data policy elaboration (for open science, innovation and education).

Evaluation of projects and attribution of research funding (expert for INSU-CNRS, FNRS, ANR, HCERES, ONERA, iNRIA).

Thirty years of teaching experience in Numerical Analysis, Probability, Statistics and Data Analytics.

Direction of 10 theses, 3 postdocs and numerous internships. Over 70 scientific publications, including 3 books.

Industrial contracts with: Hutchinson, Thales, Colas, Montupet, Principia RD, Semantic TS.

Organisation of large, national ans international scientific and strategy conferences.

References

Available on demand (academic and professional).

Publications, Research Projects and Industrial Contracts

Available on my academic webpage, Google Scholar, LinkedIn and ORCID

http://masch.perso.math.cnrs.fr

https://scholar.google.fr/citations?user=bRc87BMAAAAJ&hl=en

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https://www.linkedin.com/in/mark-asch-8a257130/

Bio

Mark Asch holds a B.S. degree in agronomy, an M.S. degree in applied physics from the Hebrew University of Jerusalem (1984) and M.S. and Ph.D. degrees in Mathematics (1990) from the Courant Institute of New York University. After post-doctoral work at the Institute of Advanced Studies, Princeton and INRIA, France, he was appointed assistant professor at the University of Paris XI. In 2001 he was nominated as professor of mathematics at the University of Toulon, and since 2005 at the University of Picardy where he was vice-chancellor for research between 2005 and 2008. After 2 years as scientific officer for HPC at CNRS in Paris, and 3 years at the French Ministry of Research as scientific officer for mathematics, computing and e-infrastructures, he was on secondment at the French Research Agency (ANR). He was scientific advisor for data science and IA to the CTO of Total, in their headquarters of Paris between 2017 and 2019. His research interests are in environmental acoustics (see for example https://lejournal.cnrs.fr/videos/dans-les-abysses-avec-les-cachalots for an ongoing project), wave propagation, random media, control theory and the application of control methods to inverse problems. He has an ongoing collaboration for the coupling of model-based and Machine Learning methods to the design of new-generation Li-ion batteries (see https://www.erc-artistic.eu/). He has published

over 70 articles and conference proceedings in these domains. His book, "Data Assimilation: Methods, Algorithms and Applications", was published in 2016 by SIAM, USA. HIs latest book, "A Toolbox for Digital Twins: from Model-based to Data Driven" also published by SIAM, US, will appear in 2022. He has led an action theme in the Belmont Forum "Data Management and e-Infrastructure" initiative and is, since 2015, was co-organizer of the international BDEC (Big Data and Extreme-Scale Computing) initiative from 2015 to 2020 (see https://www.exascale.org/bdec/). Prof. Asch is a member of the Acoustical Society of America (ASA), the IEEE and the Society for Industrial and Applied Mathematics (SIAM).

Personal data

Date of birth: 05-02-1956
Age: 65 years
Married, 1 child

Nationality: French
Languages: English (mother tongue), French, Hebrew, Afrikaans.

Personal address: 75 rue de la Plaine, 75020 Paris, FRANCE
Mobile phone: +33 6 7315 2978

GLOSSARY

ANR - Agence Nationale de la Recherche

CIMPA - Centre International de Mathématiques Pures et Appliquées

CINES - Centre Informatique National de l'Enseignement Supérieur

CIRM - Centre International des Rencontres Mathématiques

e-IRG - e-Infrastructures Reflection Group

ERAC - European Research Area Committee

ESFRI - European Strategy Forum on Infrastructures

FEDER - Fonds Européen de Développement Régional

FNRS - Fonds National pour la Recherche Scientifique (Belgique)

G8-WG - G8 Working Group

GENCI - Grand Equipement Nationale pour le Calcul Intensif

HCERES - Haut Conseil pour l'Evaluation de la Recherche

HPC - High Performance Computing

IDRIS - Institut de Développement et des Ressources en Informatique Scientifique

IHP - Institut Henri Poincaré

IHES - Institut des Hautes Etudes Scientifiques

INRIA - Institut National de Recherche en Informatique et Automatique

INSU - Institut National des Sciences de l'Univers (CNRS)

ONERA - Office Nationale d'Etudes et de la Recherche Aérospatiales

PRACE - Partnership for Advanced Computing in Europe

RDA - Research Data Alliance

RENATER - Réseau National de télécommunications pour la Technologie
            l'Enseignement et la Recherche.