HEDI HAMMAMI

DRIVE SCIENCE & RESEARCH

FREELANCER RESEARCH & CONSULTANT

Contact

Drive Science & Consulting
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Education

May 2009
Ph.D.: Animal Breeding And Genetics
Faculté Des Sciences Agronomiques & Ingénierie Bio, Gembloux, Belgium

October 2006
Master of Science: Agricultural And Biological Engineering
FUSAGx, Gembloux, Belgium

October 2003
Master of Science: Animal Breeding And Reproduction
Institut National Agronomique de Tunisie, Tunis, Tunisia

September 1987
Bachelor of Science: Animal Sciences
Ecole Supérieure D'Agriculture De Mateur, Mateur, Tunisia

PROFESSIONAL SUMMARY

- Seeking for freelancer research-development, consulting, and training opportunities that offer challenges in the field of life and environmental sciences with more focus on animal science. Benefiting from good experiences and interactions with large consortia of researchers and stakeholders in the domain of big data management and analysis; creation of innovative tools for farm management, decision making and risks ; statistical and quantitative genetic modeling as applied to animal breeding and their valuation while nurturing my strengthened and accumulated potential and skills over time, various environments and disciplines. My proposed activities as freelancer will benefit from my accumulated experiences in related fields. My research career is also particular as I achieved both industry and scientific exposure giving me a better understanding how basic research can ultimately lead to a precise impact in the field of animal production. I also moved from more applied to basic research
- I was graduated in 1987 as an agricultural engineer in animal and fodder productions. I started my professional career in the field of research and development by characterizing the small ruminant farming systems under traditional and extensive conditions in northern and mountains regions of Tunisia (OEP-GTZ). Then, my professional experiences was accumulated in R&D within the national organization for the development of livestock and its national center for genetic improvement in the field of animal resources management, genetic and health traceability (CAG-OEP).
- After this professional experience in R&D in the livestock industry, I decided to complete my training course first with a MSc in genetics and animal reproduction (INAT, Tunisia), then another MSc in agricultural sciences and biological engineering (FUSAGx, Belgium). I applied for and obtained a competitive PhD grant from the National Funds for Scientific Research (FNR) of Luxembourg for a doctoral research period of 4 years to investigate genotype by environment interaction of Holstein dairy cows as a proxy-indicator of their adaptive capacity using two Holstein populations. In the next step of my career I applied and was funded as a Postdoctoral fellow for a research period of 4 years by the FNRS, extending my research activities on genetic diversity and adaptation into the context of climate change. The achievements in the field of heat stress studies were attracting for several other research groups and enhanced an active collaboration with an international research networks
- In fine, I had an active collaboration as a researcher with the genetics, genomics and numerical modeling (ULiège-GxABT, Belgium). I gained a degree of maturity and an expertise in life sciences and the modeling of production processes within the group on the field of Bigdata management and analysis; innovative phenotyping of rare, complex and difficult to measure traits; and

INTERESTS

- Life & environmental sciences
- Agriculture & Bio-engineering
- Genetics and Numerical modeling
- Interactions animal-environment-climate
- Resilience and mitigation under climate change scenarios
- Animal welfare
- Big-data & high throughput phenotyping
- Transition towards agroecology
- Numerical transition and digitilisation in agriculture

SKILLS

- Big data analysis & exploration
- Statistical modeling
- Animal genetics and husbandry
- Bioinformatics
- Life sciences
- Training and project management
- SAS (9.2/9.3/9.4, Enterprise Guide, Miner, Viya)
- Relational database management (MySQL, Access, dBase III+)
- R, Fortran
- Microsoft office
- Linux and DOS platforms

Accomplishments

Liste of scientific publications and communications

https://scholar.google.com/citations?hl=fr&user=nP4qNoEAAAAJ&view_op=list_works&sortby=pubdate

statistical, genetic and genomic modeling applied to animal breeding and herd management and various environments.

- I was also very active in the training and supervision of future engineers, field advisers, supervisors and young researchers in the field of animal production sciences, the digitalization of data collection and acquisition, and on data modeling and the valuation of research results.
- I have carried out various consulting and support missions for breeders, professional organizations on aspects concerning the sustainability of breeding systems under changing socio-economic and environmental environments.

WORK HISTORY

January 2022 - Current
Researcher and consultant freelancer (*supplementary activity***)**, Ligny, Belgium

September 2019 - Current
Data Miner, ***SPF Finances***, Bruxelles, Belgium

- Implementation/consolidation of mathematical techniques to predict financial outcomes and cadastral taxation
- Development of statistical analysis and data visualization and dashboards
- Run statistical analyses within SAS to process large datasets.

October 2014 - August 2019
Research Associate, ***University of Liège/Gembloux Agro-Bio Tech***, GEMBLOUX, Belgium

- Conducting several large collaborative dairy cattle genetics and bioinformatics EU research projects [e.g. OptiMIR, 2-org-cows, GplusE] which led to i) the identification and exploitation of novel milk-based biomarkers and the capitalization of MIR spectra, high throughput data acquisition at phenotypic and genomic levels on animals, environments, and genes for genetic selection and herd management especially for complex, rare and difficult to measure routinely traits. ii) development of sustainable, efficient and climate-smart breeding programs and management tools.
- Applied theories and methods of life sciences to interpret and perform statistical analyses of experimental and field results.
- Wrote research papers, reports and reviews regarding genetics, genomics and numerical modeling.
- As part of multi-partner research projects (e.g. OPTIMIR, GplusE), I was active as convener in monitoring, evaluation and communication with partners (milk recording organizations, Data Scientists).
- Co-supervision / training of MSc, PhD students and R&D staff in the field of genetics and numerical modeling.

Certifications

Certificate of completion SAS Viya 2 Advanced
Certificate of completion SAS Macro language 1
Certificate of completion SAS Programming 2
Certificate of completion SAS Programming 3
Certified Programming for SAS Viya
Certificate of completion SAS Viya Advanced
Certificate of completion SAS Viya basics

Languages

French, Arabic: Native language
English: C1

Advanced

May 2009 - September 2014
Postdoctoral Research Fellow, ***FNRS-FRS & ULg***, Brussels & Gembloux, Belgium

- Conducting research activities oriented towards aspects of genetic diversity, resilience, efficiency and transition on an animal scale and also breeding systems as improving elements of the animal's capacity to emerging diseases, nutritional, reproductive and environmental challenges.
    - Conception and contribution to the design of an FNRS Postdoctoral fellow research project for the selection of robust dairy cows under anticipated climate changes.
    - Scientific stay at INIA (Spain) to extend research objectives to hot regions of Europe and enhance collaborative research facilities with American latin and North African researchers in the field.
    - Active collaboration with large network of researchers in animal adaptation to climate change (MACSUR project, FACCE-JPI), in the transition to organic and low-input systems (2-Org-Cows, CORE organic), in animal welfare (DairyCare, EU Cost Project) and other international networks dealing with genetic adaptation and mitigation under climate change (Global Research Alliance “GRA” and Animal Selection Genetics and Genomics Network “ASGGN”).
- Wrote and published peer-reviewed articles concerning findings and highlighted possible applications for findings.

October 2004 - April 2010
PhD Student Researcher, ***FUSAGx & FNR Luxembourg***, GEMBLOUX, Belgium

- Study of genotype by environment interaction of Holstein dairy cows as a proxy-indicator of their adaptive capacity using high and low-input Holstein populations.
- Performed training and courses on animal genetics and numerical modeling and implementing accurate quantitative statistical and mathematical analysis to meet my PhD project needs, including targeted data research, mining and visualization.
- Used SAS, Perl, R and Fortran packages to prepare, manipulate extensive databases and variance component estimation.
- training of consulting engineers for the valuation of the results of performance monitoring, herd management and genetic selection.

December 1992 - May 2005

Head of Data Processing, Analysis and R&D, ***Office de l'Elevage et des Pâturages (Ministry of Agriculture)*** , Sidi Thabet, Tunisia

- Implementation and management of National Animal Database for genetic improvement, identification and disease tractability
- Data analysis and delivery of valorized herd management and selection tools
- active collaboration in breeding, production chains and the management of genetic resources with Tunisian research institutions, German, Austria, France, Italy, Belgium, and Luxembourg bilateral technical cooperation projects.
- training of future agricultural engineers and technicians in the field of animal production sciences and data modeling, biometry and automation of information systems, management and exploration of breeding data.

June 1988 - November 1992

Head of Section Monitoring and Evaluation, ***GTZ (Collaborative German-Tunisian project)***, Bizerte, Tunisia

- Implementation of herd management software to collect on field data recording of goats and ewes performances under traditional systems and mountainous regions
- Led projects and analyzed data to identify opportunities for goats and ewes herd improvement and poverty limitation.