

Rani Hamrouche



SKILLS

Creativity
Problem-solving
Critical thinking
Leadership
Communication
Business development
Management
International expertise
Solution oriented

LANGUAGES

English
French
Arabic

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EXPERIENCE

SEP 2023 - PRESENT

Founder & CEO AMG Technologies Oy

Creating a multidisciplinary partnership with infrastructures experts and combining a variety of technologies to provide the most comprehensive values proposition for our customers in the traffic infrastructure industry.

SEP 2017 - SEP 2023

Airfield services manager at Roadscanners Oy

Creating the new unit dedicated to airfields pavement condition assessment using GPR technology. This required the development of new products and processes for planning in situ data collection, data processing and reporting analysis and diagnostics to match specific needs of the highly demanding aviation industry in terms of safety, planning and accuracy. Furthermore, I remained involved in GPR-related R&D developments that encompass software, hardware and data processing. Among the newly developed products for internal use, I lead the development of "RoadDoctor Digitizer", a self-sufficient compact "trailer" with various instrumentations synchronized and controlled wirelessly.

Other key responsibilities included market development and market penetration, identifying opportunities, leading the airport team and building new connections while reinforcing existing relationships with customers and partners globally.

MAY 2012 - SEP 2017

Senior consultant at Roadscanners Oy

Planning and delivering effective instruction related to implementation of GPR projects, expertise and consulting, R&D, marketing, training and technical support with RoadDoctor software together with various GPR systems (Kontur, GSSI, IDS, Malå, IRIS GPR, ImpulseRadar, US Radar, UTSI etc...).

SEP 2007 - NOV 2011

University Teaching and Research Fellow

Focus on developing GPR imaging algorithm to create a digital twin based on a multi-receiver acquisition. The development was made using FDTD numerical modelling to simulate various masonry unfilled joint defects. The algorithm was tested on real masonry structures and the effectiveness in detecting small-sized voids (deep unfilled joint defects, buried pipes) was demonstrated.

EDUCATION

Henley Business School, UK.

Master of Business Administration (Executive MBA) - (2020 - 2023)

Université de Sherbrooke, Canada.

PhD, Civil Engineering (2007 - 2011)

Université Paul Sabatier (Toulouse III), France.

Doctor of Science, Civil Engineering (2007 - 2011)

Institut national des Sciences appliquées / INSA Toulouse. France.

Master's degree, Civil Engineering (2006 - 2007)

PUBLICATIONS

- "Innovative approach in the use of GPR and LIDAR for surface and subsurface airfield pavement evaluation" Speaker at the ASCE/International Airfield and Highway Pavements Conference 2021. USA
- "Experiences using NDT methods to detect microcracking in asphalt overlays" IRF Global R2T, Conference & Exhibition 2019, Las Vegas, Nevada, USA.
- "Nondestructive moisture mapping from basement walls with high-frequency GPR" 17th International Conference on GPR (GPR 2018), Rapperswil, Switzerland.
- "Improvement of a coreless method to calculate the average dielectric value of the whole asphalt layer of a road pavement". 15th International Conference on Ground Penetrating Radar (GPR 2014), Brussels, Belgium.
- "Numerical simulations and laboratory tests to explore the potential of GPR in detecting unfilled joints in brick masonry structure". Article published in the International Journal of Architectural Heritage. October 11, 2011.
- "Simulation and Detection Limit of EM Waves in Masonry Structures with Application of An Algorithm for Image Processing". Paper presented at Progress in Electromagnetics Research Symposium Proceedings Marrakesh, Morocco, Mar. 20-23, 2011.
- "Inspection of masonry brick using GPR". Presented at the Symposium "Le Pont" on the structures 19 and 20 October 2010 in Toulouse, France.
- "Assessing the status of underground concrete by Non-Destructive Testing " Paper presented at the Symposium INFRA, Mont-Tremblant, November 2009, Quebec, Canada
- "Numerical modeling of ground-penetrating radar (GPR) for the investigation of defects in jointing brick masonry structures". Paper presented at NDTCE'09, Non-Destructive Testing in Civil Engineering Nantes, France, June 30th - July 3rd, 2009
- "Simulations of the propagation of GPR waves in masonry structures". Paper presented at the 16th Symposium on the progress of research on Quebec bridges, 5 and 6 May 2009, Laval University, Quebec, Canada.