Rémi Kahwaji
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EDUCATION:

Bachelor of Engineering, Honors Mechanical Engineering, Dean's Honor List 2009-2013
McGill University, Montreal QC, Canada

Study Abroad Program, Mechanical Engineering 2011-2012
École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland

Baccalauréat Français, Section Scientifique Spécialité Math et Option Audio-visuel, **Mention Très Bien** 2006-2009
Grand Lycée Franco-Libanais, Beirut, Lebanon

SKILLS:

Languages: English (Fluent), French (Fluent), Arabic (Fluent), Italian (Basic)
Computer Languages: Java, C++, MATLAB, Mathematica, GnuPlot, LaTex, LabView, SolidWorks

RELEVANT EXPERIENCE:

Undergraduate Thesis at McGill University in fluid-structure interaction (In Progress) 2013
Studied Dynamics of pipes conveying fluid with non-classical boundary conditions, flexibly constrained at the ends

Independent undergraduate research with Professor James Williams from MIT (In Progress) 2013
Worked on Method of Characteristics in Partial Differential Equations applied to the classical wave equation

Founder and President of McGill Wind Pump Initiative (www.windpumpinitiative.mcgilleus.ca**)** 2012-2013

- Founded a club to design a cheap and sustainable windmill to pump water in developing regions in Africa.
- Designed and chose the appropriate Savonius rotor for maximum power generation.
- Studied the implementation of a car differential to combine two power inputs together for better output efficiency.
- Organized the structure of the club, set up general objectives for sub-teams and supervised the overall progress.
- Presented the project at the McGill Sustainability Symposium 2013

DAAD-RISE Fellowship at University of Kassel, Germany, in Finite Element Analysis 2012

- Worked with the Maxwell equations to study the material properties of an iron bar subject to changing electro-magnetic field conditions
- Worked on the numerical modeling of the problem using the Finite Element Method (FEM)
- Used numerical method techniques on MATLAB to solve PDEs of the electric and magnetic fields

Teaching Assistant at McGill University in Advanced Calculus for Engineering 2011-2013

- Lead weekly tutorials of about 30 students, reviewed notions learnt in class and gave practice problems
- Graded assignments and other submitted work
- Organized intensive final review sessions for 200 students to cover the whole semester material in three hours

Undergraduate researcher at University of Luxembourg in Discrete Element Analysis 2011

- Contributed in the development of computational models using object oriented techniques to predict the thermal conversion, combustion or formation of pollutants processes
- Worked on the verification of diffusive, gaseous species transport in Discrete Element Method (DEM)
- Worked on the comparison of the analytical and numerical solution of the diffusion PDE using Matlab
- Used C++, ParaView, Gnuplot and Excel for modeling, simulating and outputting data of different cases of time varying physical processes with initial and boundary conditions

Author of research paper "Terraforming, a reality or science fiction?" 2011

- Paper was selected for the 62nd International Astronautical Congress (South Africa 2011)
- 15-minute oral presentation (Q&A time included) in the context of the "habitation throughout the solar system" session, part of the "Symposium on Space Activity and Society" at the IAC2011
- Paper presented at American University of Beirut's stand in "Science Day 2011" at the Beirut hippodrome

Member of the McGill Lunar Excavator Team (www.lunarex.mcgill.ca) 2010-2011

- Competed in the "NASA 2011 Lunabotics mining competition" at the Kennedy Space Center (Orlando)
- Participated in the conceptual design process as well as the design using SolidWorks
- Built mechanical components using aluminum sheets, foam, and steel
- Participated in the testing process, i.e digging the sand by the robot, collecting it and calculating its mass

Work with the Space Generation Advisory Council (SGAC) as the first National Point of Contact for Lebanon 2011-2013

- Provide a connection between Lebanon and the SGAC
- Regular regional meetings on skype with other NPoCs
- Built a page for Lebanon: http://spacegeneration.org/index.php/sgac-regions/middle-east/lebanon

AWARDS

- Dean's Honor List (2012-2013) for placing in the top 10% of students in the Engineering Faculty
- Engineering faculty 's Charles H Ivey Foundation Scholarship (2012-2013) for high academic achievement (Dean's Honor List) and for demonstrating entrepreneurial nature
- DAAD-RISE scholarship for a summer research internship at Universität Kassel (2012)
- Mobility Awards recipient twice, granted by McGill University for a study away program at Ecole Polytechnique Fédérale de Lausanne (2011-2012) and for an undergraduate research project at University of Luxembourg (2011)
- Antje Graupe Prior International SURE Award for the participation in the DAAD-RISE program (2012)
- Member of Golden Key International Honor Society
- Finalist in the Dalai Lama Fellowship competition 2012 for the McGill Students' Wind Pump Initiative

COMMUNITY INVOLVMENT:

Co-Founder of the "Social Erasmus Lausanne" program in Switzerland

- Got selected along 7 people out of a pool of 300 applicants to create a platform for volunteering opportunities
- Built conceptual website for the program aimed at exchange students visiting Switzerland
- Collaborated with representatives from various volunteering associations into joining the program

Educational and Outreach activity

- Participated in first aid formation in Switzerland with the "Lausanne Samaritains"
- Volunteered with ISEB Space Ambassadors (International Space Education Board) for outreach in South Africa, performed general organizational tasks and taught school kids how to build a mini solar car
- Performed an outreach mission to inform Aboriginal school children about engineering at McGill University

Social, political and Environmental activism

- Active member of the international environmental and social focused NGO "IndyAct"
- Collaborated with "American University of Beirut" Greenpeace club in tree planting events in urban areas
- Participated in runs for fundraising with Engineers Without Borders Canada and the Children Wish foundation
- Volunteered in taking care of cognitively disabled individuals with the Youth of the Order of Malta
- Contributed to the Secular Students Movement in Lebanon

EXTRACURRICULAR ACTIVITIES AND INTERESTS:

Interests: Membership and involvement in conferences with the McGill Institute for sustainability in Engineering and design
Strong interest in renewable energies and visits to geothermal plant in Iceland, heat pump facility in Switzerland

Music: Drumming with rock band, basics of flute, oriental percussions, knowledge in solfeggio and music theory from 5 years of courses at the National Conservatory of Lebanon

Sports: Athletics: Tracking, cross country running
Soccer: captain of an intramural team at McGill, Skills in Freestyle Soccer
Outdoor: Sailing, bungee jumping, camping, indoor and outdoor rock climbing, abseiling, hiking, canoeing, swimming, skiing

Audiovisual: Movie making (Windows Movie Maker, CyberLink PowerDirector) and participation in photo contests: McGill Engineering Student Experience Photo Contest 2011 – 1st prize in Host-Culture category