# Department of Mechanical Engineering

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# University of Victoria

August 9, 2013

To: M.C. Gloria Irene Carmona Chit Directora del Instituto Tecnológico de Toluca

### Re: Termination Letter

This letter is to confirm that Mr. Francisco Roman Peña de la Rosa completed his Undergraduate Summer Research, "Programa Delfín" internship at the University of Victoria, June 24<sup>th</sup> – August 9<sup>th</sup> under my supervision in my Assistive Robotics and Mechatronics Laboratory (ARM Lab) in the project "Haptic rendering of the acceleration of particles moving along pre-specified paths".

This project required Roman: (i) to use the Virtual Reality toolbox of Matlab to implement a physical simulation of a sphere rolling on rough ground; (ii) to use the Visualization toolbox to display the simulated motion of the sphere on the screen in real time; (iii) to send the acceleration of a point on the sphere to a Novint Falcon haptic device where it will be used to provide haptic feedback to users; and (iv) to design a graphical user interface (GUI) to permit users to select the point the sphere whose acceleration they want to feel, as well as values for the system parameters. Roman learned quickly how to use the Matlab toolboxes he needed for this project. He also demonstrated good work ethics, ability to work with minimal supervision and under tight deadlines and motivation to succeed. Roman's contribution to my laboratory was on par with that of undergraduate students in our university during a 6 weeks project.

Should you have any questions regarding the projects, the supervision, the ARM Lab or the University of Victoria, feel free to contact me anytime at <a href="mailto:danielac@me.uvic.ca">danielac@me.uvic.ca</a> or phone 1.250.721.6040.

Sincerely,

Daniela Constantinescu, Ph.D., P.Eng.

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of Victoria

August 9, 2013

To: M.C. Gloria Irene Carmona Chit Directora del Instituto Tecnológico de Toluca

## Re: Letter of Release

This letter is to confirm that Mr. Francisco Roman Peña de la Rosa completed his Undergraduate Summer Research, "Programa Delfín" internship at the University of Victoria, June 24<sup>th</sup> – August 9<sup>th</sup> under my supervision in my Assistive Robotics and Mechatronics Laboratory (ARM Lab) in the project "Haptic rendering of the acceleration of particles moving along pre-specified paths".

The project required Roman to use the Virtual Reality and the Simulink/Real Time Workshop toolboxes of Matlab to develop a physically-based simulation of a sphere rolling on rough ground. During the project, Roman demonstrated good work ethics, ability to work with minimal supervision and under tight deadlines, and motivation to succeed. Roman's contribution to my laboratory was on par with that of undergraduate students in our university during a 6 weeks research project.

Roman's work during his internship at the University of Victoria shows that he is keenly interested to improve his academic and research abilities. Therefore, I believe that Roman should continue to be involved in research to fully develop his research potential, and I recommend that he applies and is accepted for a 6 months research program supported by COMECyT, CONACyT and the Mexican Estate Government.

Should you have any questions regarding the projects, the supervision, the ARM Lab or the University of Victoria, feel free to contact me anytime at <a href="mailto:danielac@me.uvic.ca">danielac@me.uvic.ca</a> or phone 1.250.721.6040.

Sincerely,

Daniela Constantinescu, Ph.D., P.Eng.

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