Colloque REPARTI 2021 (virtuel)
Regroupement FRQNT-REPARTI – FRQNT-REPARTI Strategic Network:
Systèmes cyberphysiques et intelligence machine matérialisée
Cyberphysical Systems and Embedded Machine Intelligence
16 juin 2021, 9h00 – 11h00

9h00 Introduction
Clément Gosselin, Directeur, REPARTI, Université Laval

9h05 Keynote
Ilian Bonev, École de Technologie Supérieure (ÉTS)

From inventing robots in academia to reinventing the industrial robot

Description
Most university researchers have experience dealing with industrial partners, but few have confronted the full spectrum of differences between running a research lab and running a manufacturing business. From continuous to discrete functions, from studying what’s intriguing to doing only what’s absolutely necessary, from “Dear respected Sir” to “Why should I do this?”, the gap between academia and industry is so wide, you constantly have to learn new skills. In this talk, I will share aspects from my personal experience as the co-founder of an industrial robot manufacturer with some 1000 robots in the field. I’ll focus mainly on the privilege of influencing how an industrial robot must operate, on educating customers but also learning from them, and on the many soft skills that a professor must acquire.

Bio
Ilian Bonev completed his M.Sc. degree in mechatronics at GIST, South Korea, in 1999, and then his Ph.D. in 2002 and a postdoctoral fellowship in 2004, at Université Laval, QC, Canada, all three in the area of parallel robot analysis. Since 2004, he has been a professor at the ETS, Montreal, where he heads the Control and Robotics Lab (CoRo). His research interests mainly include the areas of parallel robots, precision robotics, and collaborative robots, and he teaches industrial robotics. In 2013, Ilian cofounded Mecademic with one of the graduate students he was supervising. At first, Mecademic aimed at commercializing one of Ilian’s parallel robot designs, for academic purposes, but the company promptly changed its focus, to offer ultra-compact and precise industrial robot arms.

9h45 Questions & Discussion
10h00  Présentations des chercheurs de REPARTI (un chercheur par institution membre) :
Presentations by REPARTI researchers (one researcher per member institution):
*Chaque présentation (5 min.) sera suivie d’une période de questions (2 min.)
Each presentation (5 min.) will be followed by a question period (2 min.)*

**Computer Graphics and Machine Learning: an exchange of inductive biases and methodologies**
Derek Nowrouzezahrai, McGill University

**L’apprentissage par renforcement — En théorie et en application**
Audrey Durand, Université Laval

**Laboratoire LITIV : Interprétation et Traitement d’Images et Vidéo**
Guillaume-Alexandre Bilodeau, Polytechnique Montréal

**Exploring ubiquitous haptics on wearables and everyday objects**
Vincent Lévesque, École de Technologie Supérieure (ÉTS)

10h30  Présentations des étudiants de REPARTI (un étudiant par institution membre) :
Presentations by REPARTI students (one student per member institution):
*Chaque bloc de présentations (3 min., chacune) sera suivie d’une période de questions (5 min.)
Each block of presentations (3 min., each) will be followed by a question period (5 min.)*

**Reconstruire la matière blanche avec l’apprentissage par renforcement**
Antoine Théberge, Université de Sherbrooke

**Improving gearshift controllers for electric vehicles with reinforcement learning**
Marc-Antoine Beaudoin, McGill University

**Accurate outdoor ground truth based on total stations**
Maxime Vaidis, Université Laval

10h40  Questions & Discussion

10h45  Présentations des étudiants de REPARTI (un étudiant par institution membre) :
Presentations by REPARTI students (one student per member institution):

**Localisation collaborative pour visiteur de musée**
Samuel Arseneault, Polytechnique Montréal

**Towards the design of a floating snake for remote underground exploration**
Jorge Salas Gordoniz, École de Technologie Supérieure (ÉTS)

**Siamese Networks in Video Surveillance**
Madhu Kiran, École de Technologie Supérieure (ÉTS)

10h55  Questions & Discussion

11h00  Mot de la fin – Closing Remarks
Clément Gosselin, Directeur, REPARTI, Université Laval