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Louis Leblanc

Education

present **Embedded Systems Engineering Certificate**, *University of California, Irvine, Online Extension*, Irvine, California.

2013 **BASc in Mechanical Engineering**, *University of Ottawa*, Ottawa.

Experience

2015-present **Mechanical Designer**, *Dynamo Playgrounds*, Rockland, Canada.
Mechanical Design, Manufacturing Support, Industrial Design.
- Technical lead on large scale custom projects from initial design vision through engineering and finally supporting manufacturing.
- Developed a computational model through full scale dynamics testing of play vehicles. Analysis and insight gained using Python notebooks.
- Developed a new rope net design process. Reducing design time by 50% while increasing reliability by combining tensile structure theory with empirical data.
- Technical supervision and support in the production of 100m length bent pipe play sculptures. Developed a Grasshopper definition and Python scripts to interpret complex CAD data into measurements usable by production crew.

2014-2015 **Freelance Consultant**, *Prototype D*, Ottawa, Canada.
Industrial , mechanical design and embedded systems in the development of new products.
- Conceived a novel automated 3D mapping surveying system. Formulated the system's architecture and ultimately fabricated a hardware and software proof of concept using 3D printing and the Arduino platform.
- Validated the structural integrity of a home cladding system through FEA confirmed by physical testing.

2011–2013 **Research Assistant**, *University of Ottawa & Atomic Energy Canada*, Ottawa, Canada.
Research project in the dynamics of the deflagration of hydrogen mixtures in air. This research was done by blowing soap bubbles filled with a hydrogen-air mixture onto a flat surface and filming their combustion with a high speed camera.
- Development of a technique, apparatus and soapy solution to reliably blow 45cm (18in) soap bubbles.
- Publications from this research was awarded the American Physics Society's 2013 Milton van Dyke award for a video of fluid motion and was featured on Discovery's Daily Planet.

Skills

Programming	C, Python	**Languages**	Native proficiency in English and French
Electronics	Arduino, Atmel AVR	**CAD**	Rhino/Grasshopper, Autodesk Inventor, Ansys FEA
Office	MS Office Suite, Excel, Powerpoint, LaTeX, Adobe Photoshop	**Hands-On**	Machine Shop Training, MIG Welding, 3D printing

Publications

L. Leblanc, M. Manoubi, K Dennis, Z. Liang, and M.I. Radulescu. Article and video - dynamics of unconfined spherical flames: Influence of buoyancy. *Physics of Fluids*, 25(9):091106, 2013. Winner of the American Physics Society's Van Dyke award for a video of fluid motion.