

Julien Vanier

Co-Founder, CTO at MuniRent

julien.vanier@mail.mcgill.ca

Summary

I'm a computer engineer turned entrepreneur.

After working on embedded gasoline engine controls for 8 years, I started my own company doing web development and smartphone app development.

Specialties:

Ruby on Rails web application

Android and iOS native development

Embedded software development, model-based design, rapid prototyping (ASCET, Matlab Simulink)

Experience

CTO & Co-Founder at MuniRent

July 2014 - Present (4 months)

I'm the CTO & co-founder of MuniRent

MuniRent is a website where local governments can rent equipment to each other.

I put together the web application in Ruby on Rails, and all the DevOps that goes with hosting a multi-tenant cloud application.

CTO & Co-Founder at 1000tools

May 2013 - Present (1 year 6 months)

Prior to working on MuniRent, I was the CTO & co-founder of 1000tools.com.

1000tools.com is a sharing-economy website where people can share tools locally. The 1000tools.com Ruby on Rails application was the basis for MuniRent.

Owner and Developer at Send To Car Smartphone App

March 2012 - Present (2 years 8 months)

I'm the author of Send To Car for Android and Send To Car for iOS

Send To Car is an app to send address to car navigation systems. It relieves from the pain of having to manually enter an address in the awful car navigation system interface. Instead, just search for an address on your phone and Send To Car will send it to the nav system in your car. More than a dozen brands work, all over the world.

Send To Car has more than 100,000 downloads, more than official app from brands like BMW and Ford!

The Android version is free and open source. The iOS version is \$3.99.

Technical Expert - System Engineering at Robert Bosch LLC

September 2005 - July 2014 (8 years 11 months)

I developed embedded engine control software for 3 generations of Bosch Motronic Engine Control Units. I worked on production and research projects for the Detroit OEMs as well as 2 research projects with funding from the US Department of Energy.

My responsibilities included developing controls for new actuators from concept and function development to final implementation and validation, prototyping an entire engine management system including hardware and software for engine dyno applications.

Software developer at Oracle

2004 - 2005 (1 year)

1 recommendation available upon request

Languages

English	(Native or bilingual proficiency)
French	(Native or bilingual proficiency)

Skills & Expertise

Powertrain
Rapid Prototyping
Embedded Systems
Simulations
Data Acquisition
Embedded Software
Electronics
Integration
Oracle
Calibration
Systems Engineering
Automotive
Control Systems Design
C
Microcontrollers
Simulink
Software Development
Vehicles
Automotive Electronics

Vector CANalyzer
Matlab
Engineering
Software Engineering
Root Cause Analysis
Automotive Engineering
Embedded C
Testing
Continuous Improvement
C++
DFMEA
Electrical Engineering
Architecture
Project Management
Product Development

Publications

Parameterization and Simulation for a Turbocharged Spark Ignition Direct Injection Engine with Variable Valve Timing

SAE 2009-01-0680 2009

Authors: Julien Vanier, Li Jiang, Hakan Yilmaz, Anna Stefanopoulou

This paper describes the development of a mean value model to capture the behavior of a turbocharged Spark Ignition Direct Injection (SIDI) engine with Variable Valve Timing (VVT). This model was parameterized using experimental data collected from a four cylinder SIDI engine over a wide range of operation conditions.

Online Adaptive Residual Mass Estimation in a Multicylinder Recompression HCCI Engine

ASME 2013 Dynamic Systems and Control Conference October 21, 2013

Authors: Julien Vanier, Jacob Larimore, Anna G. Stefanopoulou, Li Jiang, Shyam Jade, Erik Hellström

This work presents two advances to the estimation of homogeneous charge compression ignition (HCCI) dynamics. Combustion phasing prediction in control-oriented models has been achieved by modeling the in-cylinder temperature and composition dynamics, which are dictated by the large mass of residuals trapped between cycles. As such, an accurate prediction of the residual gas fraction as a function of the variable valve timing is desired. Energy and mass conservation laws applied during the exhaust valve opening period are complemented with online in-cylinder pressure measurements to predict the trapped residual mass in real time. In addition, an adaptive parameter estimation scheme uses measured combustion phasing to adjust the residual mass prediction. Experimental results on a multicylinder gasoline HCCI engine demonstrate the closed loop residual estimation's ability to compensate for modeling errors, cylinder to cylinder variations, and engine wear. Additionally it is shown that using the adaptive parameter estimation reduces the model parameterization effort for a multicylinder engine.

J2998 - Model Description Documentation Recommended Practice for Ground Vehicle System and Subsystem Simulation

Society of Automotive Engineers January 2, 2014

Authors: Julien Vanier, Dynamical Modeling And Simulation Committee

The Model Description Documentation Recommended Practice for Ground Vehicle System and Subsystem Simulation defines the recommended information content to be included for documenting dynamical models used for simulation of ground vehicle systems. It describes the information that should be compiled to describe a model for the following user applications or use cases: (1) exchange, promotion, and selection; (2) creation requests; (3) development process management; (4) compatibility evaluation, (5) testing-in-the-loop simulations with hardware and/or software; (6) simulation applications; and (7) development and maintenance. For each use case, a Model Description Documentation (MDD) template is provided in the appendices to facilitate model documentation. In addition, an example of a completed model documentation template is provided in the appendices.

Certifications

Professional Engineer

Michigan State Board of Professional Engineers License 6201057759

Education

McGill University

BS, Computer Engineering, 2001 - 2005

Activities and Societies: Formula SAE

University of Michigan

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1 person has recommended Julien

"Julien is an exceptionally bright individual. His problem solving skills are impressive to say the least. As an intern at Oracle, his enthusiasm and thirst for learning was contagious. I would highly recommend Julien to anyone interested in hiring him."

— **Pierre Levesque**, *Principal Software Developer, Oracle*, managed Julien indirectly at Oracle

[Contact Julien on LinkedIn](#)