

Jean-Philippe Jodoin

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SKILLS

- Computer vision
- Embedded system
- C++
- Java
- Android
- OpenCV
- Tracking
- Security

PROJECTS

Espace Libre 05/2013 - Now

CTO/Founder (C++, Python)

We've created a parking detection system for on-street and off-street parking using a Raspberry Pi embedded system. Computer vision algorithm relies on HoG/SVM and detector module communicate using Zigbee RF module. Information is transferred to a web server.

The Guitar Tuner App

09/2012 - Now

Software Developer (C++, Java)

We've designed a complex audio processing system to handle guitar string variation using the Android NDK in C++. Our goal was to provide simple and stable instructions to users. Application was released on both Android and BB10 : www.theguitartunerapp.com

Transport Montréal

05/2009 - Now

Software Developer (C++, Java, Python, PHP)

We've developed a new application to provide public transit information to Android users. Server side involved a generic parser able to handle multiple public transportation websites (and later, GTFS). Schedule update infrastructure relies on C++/Python/PHP. App has over 80k downloads and a 4.7/5 ratings over 1000 reviews : <http://www.transportmtl.net/>

EDUCATION

M. Sc. Computer Vision

2011-2013

École Polytechnique Montréal

GPA 3.7/4.0

Our research focuses on the challenge of detecting and tracking multiple objects of various types in outdoor urban traffic scenes using a static video camera. The resulting system aims at collecting object trajectories for road safety analysis. A related paper was presented at IEEE WACV'14. <http://www.jpjodoin.com/urbantracker/>

Bachelor in Computer Engineering

2007-2011

Université de Sherbrooke

GPA 4.1/4.3

Our final project involved building an Oktokopter (UAV) and acquiring video from a building to compute a 3D reconstruction using structure from motion (SfM) tools and library. Other interesting projects involved building a car sensor monitoring system for the Formula SAE Series, toy robots for kids, a home automation system, etc.

PUBLICATIONS **Urban Tracker: Multiple Object Tracking in Urban Mixed Traffic** 03/2014
IEEE Winter conference on Applications of Computer Vision (WACV14) · [Jean-Philippe Jodoin](#),
Guillaume-Alexandre Bilodeau and Nicolas Saunier · <http://www.jpjodoin.com/urbantracker/>

A Public Video Dataset for Road Transportation Applications 01/2014
TRB 93rd Annual Meeting · Nicolas Saunier, Håkan Ardö, [Jean-Philippe Jodoin](#), Aliaksei
Laureshyn, Mikael Nilsson, Åse Svensson, Luis Miranda-Moreno, Guillaume-Alexandre
Bilodeau, Kalle Åström

Change detection in feature space using binary local self-similarities 05/2013
Canadian Conference on Computer and Robot Vision · Guillaume-Alexandre Bilodeau,
[Jean-Philippe Jodoin](#) and Nicolas Saunier

EXPERIENCE **Autodesk** Autumn 2010 and Summer 2011
Software Engineer (C++, Lua)

For my first internship, I had to create a new type of architecture for plug-ins that would work in multiple DCC (3ds Max, Maya, Motion Builder) with minimal code rewrite. The plug-ins had to use the Kynapse middleware to generate path finding information. On my second internship, we were using gaming technologies to simulate a factory with characters and conveyors. My task was to create scriptable characters that could interact with the factory and navigate the scene.

NexGen Ergonomics Autumn 2009
Software Engineer (C++)

My role in the HumanCAD 2.0 software team was to integrate a physic engine to simulate the various joints of the human body and kinematics operation. My first task was to evaluate physic engines capabilities and we ended up choosing Simbody, an engine targeted for scientific application. Then, I had to integrate it fully in the CAD to allow users to manipulate the characters articulations and verify that ergonomic rules were respected.

Genetec Summer 2008 and Winter 2009
Software Engineer and QA (C++)

My role as a QA tester was to write test plans, and verify the correct functionality of the Omnicast video surveillance software. As a software engineer, I was part of the hardware integration team and my role was to integrate multiple IP cameras features to the software and add support of new network protocol for video streaming. As the cameras were also in development, I had to resolve complex network protocol issues and send bug reports to camera companies.

LANGUAGE French (Native)
English (Professional working proficiency)