Corentin LE MOLGAT

Tél: +33 6 66 89 42 07
corentin.lemolgat@gmail.com
Japanese spouse visa holder

Education

ENSEIRB — Bordeaux, France
09/2006–10/2009
B.S./M.S. in Computer Science with a specialty in HPC (High Performance Computing).

Work Experience

Aldebaran Robotics/SoftBank Robotics Europe — Paris, France
04/2012–now
Embedded System & Computer Vision Software Engineer

System Team:

- developed and maintained a Kernel Linux SoC Driver (C, MT9M114, OV5640).
- developed a camera firmware flasher (Gentoo & Yocto, C++).
- managed a contractor for an UVC compliant firmware (CMake, Docker, C++, Catch, Plantuml).

Vision Team:

- reworked and maintained a C++ framework for multi-client access to robot cameras (CMake, C++, Boost).
- developed tooling for a camera viewer (C++, Qt).
- developed Modularity, a C++ computational graph framework for perception.
- maintained the internal CI builfarm, testing and training (Jenkins, gcovr).
- provided training & support for CMake and C++ as a senior developer.

Misc:

- supported the vision system for the R & D team and research partners.
- provided support on the production line, Yantai (China), 1 month.

Vi Technology — St-Egrève, France
02/2010–12/2011
R&D GPGPU and Vision System Software Engineer

Responsible for the design and development of the whole acquisition and processing pipeline for a new AOI (Automated Optical Inspection) system for SPI (Solder Past Inspection) running on Linux (Fedora).

Software lead for the hardware acquisition system integration (Vertex-6 Card on PCIe):

- managed the integration of the FPGA.
- defined the protocol between the Kernel and the acquisition card.
- developed the Kernel device driver (C).
- developed debugger tools (C++, Qt).

Software lead on the image pipeline:

- developed a C++ middleware to grab and manage images from several dozens of image sensors.
- managed two co-workers to speed up development (roadmap, code review, scrum master)
- developed a 2D camera image viewer (C++, Qt, OpenSceneGraph).

Software lead on the GPGPU post-processing pipeline:

- ported the 3D reconstruction algorithm (Matlab) to a dual-GPU System (CMake, C++, CUDA 4, GTX 480) and sped it up from 15s to 7ms (x2000!).
- developed a CMake cross toolchain for managing CUDA files.
- developed a 3D PCB viewer (after 3D reconstruction) using (C++, Qt, OpenSceneGraph).

Various support as technical lead on GNU/Linux:

- CMake training & support.
- Jenkins training & support (POC, setup, design).
- Linux training & support (Bash, Fedora) (everyone else was on Windows).

KYUSHU UNIVERSITY — Fukuoka, Japan
04/2009–10/2009
Engineering intern at I.R.V.S. (laboratory for Intelligent Robots & Vision System)

- design (UML), implementation (C++) and tooling viewer (C++, Qt) of a 3D human pose estimation using non-parametric belief propagation algorithms and multiple 2D video cameras.

KYUSHU UNIVERSITY — Fukuoka, Japan
06/2008–09/2008
Engineering intern at I.R.V.S. (laboratory For Intelligent Robots & Vision System)

- 3D Reconstruction on GPU (GLSL) and tooling viewer (C++, Qt) using stereovision algorithms and four 2D video cameras.

Skills

Competence: Image Pipeline, Drivers, Robotics, Programming, Architecture, Management
Programming Languages: Bash, Kernel C, C++, Python
Programming Libraries: STL, OpenCV, Boost, V4L2, ffmpeg
Extra Interests: Android, CUDA, GLSL
Languages: French (native), English (fluent), Japanese (beginner), Spanish (beginner)

References

Dr. RABAUD Vincent
Google, Inc.
vrabaud@google.com

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