Corentin LE MOLGAT

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
R&D Computer Vision & Embedded System Software Engineer.

System Team:

- Maintenance/Development Kernel Linux SoC Driver (C, MT9M114, OV5640).
- Development of a camera firmware flasher in robot OS (Gentoo & Yocto, C++).
- Management of a subcontractor for the development of an UVC compliant firmware (CMake/qiBuild, Docker, C++, Catch, Plantuml).

Vision Team:

- Maintenance/Rework of C++ Framework to manage Robot Cameras in robot OS for multiple clients at the same time (CMake, C++, Boost).
- Development of Camera Viewer Tooling (C++, Qt).
- Design/Development/Maintenance of Modularity (a C++ Computation Graph Framework for Perception).
- Development/Maintenance of the internal CI Builfarm and Training (Jenkins, gcovr).
- Training & Support CMake as senior developer.
- Training & Support C++ as senior developer.

Misc:

- Vision System Support for Innovation Team and Research Partners.
- Support on 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) Systems for SPI(Solder Past Inspection) running on Linux (Fedora).

- Lead Software of the Hardware Acquisition System Integration (Vertex-6 Card on PCIe)
  - Management of the FPGA integrator.
  - Definition of the Protocol between Kernel and the acquisition card.
  - Development of the Kernel Device Driver (C).
  - Development of Debugger tools (C++, Qt).
- Lead Software of the Image Pipeline.

  - Development of a C++ Middleware to grab and manage images from several dozens of image sensors.
  - Management of two co-worker to speed up development (Roadmap, Code Review, Scrum Master)
  - Development of a 3D PCB Viewer (after 3D reconstruction) using (C++, Qt, OpenSceneGraph).
  - Development of a 2D Camera Image Viewer (C++, Qt, OpenSceneGraph).
- Lead Software of the GPGPU Post-Processing Pipeline.
  - Port of 3D Reconstruction algorithm (Matlab) from Algorithm Team to Dual-GPU System (CMake, C++, CUDA 4, GTX 480) Speed up from 15s to 7ms (x2000!) between Matlab and CUDA...
  - Developement of a "CMake cross toolchain" for managing CUDA files.

Misc: Various support as Lead Technical on GNU/Linux.

- CMake Training & Support
- Jenkins Training & Support (POC, Setup, Design)
- Linux Training & Support (Bash, Fedora) (everyone were Windows developers...)

KYUSHU UNIVERSITY — 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 algorithm and multiple 2D video cameras.

KYUSHU UNIVERSITY — 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 algorithm and four 2D video cameras.

Skills

Competence: Image Pipeline, Robotics, Programming, Architecture, Management
Programming Languages: C, C++
Programming Libraries: STL, OpenCV, Boost, OpenMP, MPI
Extra Interests: Android, CUDA, GLSL
Languages: French (native), English (fluent), Japanese (beginner), Spanish (beginner)

References

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

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