

Summary

Senior R&D engineer, expert in Computer Vision and Machine Learning, proficient in C++ and python and motivated team player looking for opportunities to contribute to fascinating projects in the industry by developing and implementing new algorithms.

Education

Ph.D., Electrical Engineering

Lausanne, Switzerland

ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE (EPFL)

August 2017

- Thesis: *Towards 3D facial morphometry: facial image analysis applications in anesthesiology and 3D spectral nonrigid registration*
- Adviser: Prof. Jean-Philippe Thiran

M.S., Electrical Engineering GPA: 5.56 (6.0 scale)

Lausanne, Switzerland

ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE (EPFL)

July 2012

- Thesis Topic: Thesis Topic: *Difficult Intubation Assessment from Video*
- Area of Study: Major in **information technologies** and minor in **biomedical technologies**

Professional Experience

Cognex

Fribourg, Switzerland

SENIOR SOFTWARE ENGINEER (C++, COMPUTER VISION)

May 2020 till now

- Objective: Design and implement modular libraries to be used within the Cognex Deep Learning products
- Mission: Implement and optimize new features or algorithms in C++, Modularize and modernize the software stack, Port current functionalities for IoT or cloud services
- Technologies: C++, Python, Computer Vision, Machine Learning, Deep Learning, DevOps (TeamCity, Conan, Docker)

Pix4D

Lausanne, Switzerland

SENIOR R&D ENGINEER

January 2020 till April 2020

SOFTWARE DEVELOPER (C++, COMPUTER VISION)

May 2018 till December 2019

- Objective: Develop core algorithms for a professional drone photogrammetry software suite
- Mission: Design and implement computer vision algorithms, such as deep-learning based image segmentation, multiview stereo, 3D mesh generation, or 3D point cloud filtering with spectral methods, refactor and optimize existing code base and promote good software engineering practices
- Technologies: C++, Python, Photogrammetry, Computer Vision, Machine Learning, Deep Learning, CI/CD (Concourse)
- Results: Adaptation of the main codebase to build on macOS (C++, CMake, Conan) enabling macOS support in all new products. Point cloud spectral filtering algos and library integrated into products. PyTorch implementation of a multiview stereo pipeline.

IBM Research

Zürich, Switzerland

POSTDOCTORAL RESEARCHER

October 2017 till April 2018

RESEARCH INTERN

September 2015 to February 2016

- Objective: Automatically extract knowledge from different types of document
- Mission: Conduct research in Image analysis and machine learning (e.g. relational learning), develop and test production-ready code, supervise PhD students and interns
- Technologies: C++, Python, Image analysis, Machine Learning, Markov Logic Network
- Results: Technology transfer to Watson Health, US Patent application, conference article submission

Ecole Polytechnique Fédérale de Lausanne (EPFL)

Lausanne, Switzerland

RESEARCH ASSISTANT

September 2012 to August 2017

- Objective: Automatically predict difficulty of intubation and develop a new 3D face model
- Mission: Conduct research in collaboration with CHUV and nViso, collect data in hospitals, develop a C++ library for facial images analysis, record and align a 3D database of faces, supervise students in facial images analysis projects
- Technologies: C++, Python, Machine Learning, 3D Geometry, Spectral Mesh Processing, 3D Face Models
- Results: EU Patent application, scientific publications

Skills

C++ 11/14

10y., main development language since 2013. Good knowledge of Boost, Eigen, OpenCV libraries, (modern) CMake, Conan package manager



Python

>5y. NumPy, Scipy, PyTorch, and Scikit-learn libraries



French

Mother tongue



English

Excellent knowledge, professional language since 2010



Swedish

Good knowledge, exchange year in Sweden, 2002-2003



German

School knowledge, 9 years courses



Awards

Institute for Pure & Applied Mathematics (IPAM), UCLA

FULL GRANT FOR ATTENDING THE GRADUATE SUMMER SCHOOL: COMPUTER VISION

Los Angeles, USA

Summer 2013

Selected Publications

Refereed Journal Publications

- A. Yüce, H. Gao, **G. L. Cuendet**, J.-P. Thiran. Action Units and Their Cross-Correlations for Prediction of Cognitive Load during Driving. *IEEE Transactions on Affective Computing*, Jun. 2016
doi:10.1109/TAFFC.2016.2584042
- **G. L. Cuendet**, P. Schoettker, A. Yüce, M. Sorci, H. Gao, C. Perruchoud, and J.-P. Thiran. Facial image analysis for fully automatic prediction of difficult endotracheal intubation. *IEEE Transactions on Biomedical Engineering*, vol. 63, pp. 328-339, Feb. 2016.
doi:10.1109/TBME.2015.2457032

Patents

- **G. L. Cuendet**, P. Staar, M. Gabrani and K. Bekas. A method and a system to fully-automatically and quantitatively analyze technical diagrams. Patent to be filed at the US Patent Office.
- P. Schoettker, **G. L. Cuendet**, C. Perruchoud, M. Sorci and J.-P. Thiran. Difficult intubation or ventilation prediction system. Patent pending at the European Patent Office, October 2013.

A complete list of publications can be found on <https://gcuendet.github.io/publications/>

Extra-curricular

Certificat amateur de violon (certificate of violin amateur studies)

CONSERVATOIRE DE FRIBOURG

Fribourg, Switzerland

June 2009

Chamber music

2009 to present

- Violinist of the "Chromatique" piano trio. We perform public concerts in the french speaking part of Switzerland, playing the classical and romantic repertoire.
- Chamber music master classes in Switzerland and Germany with amongst others: the Mandelring quartet, Paul Cocker, Joel Marosi or the Trio Lenitas.

References

Available upon request