Benoit Seguin

Personal Data

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Professional Experience

Current
Jan 2019

Independent Engineer
Benoit Seguin, Consulting & Software Development
Consulting and development missions for Heritage Institutions, related to large-scale analysis of cultural data.
Example of projects include: designing a plan leveraging document analysis and image recognition for the automatic organization of the Photo-Archive of the Getty Research Institute (Los Angeles) ; designing and developing a complete system for exploring textual correlations across 500'000 pages of Architectural History for the ETH Library (Zurich) ; designing and developing a scalable system for visual search among millions of photographs from newspapers archives for the Impresso Project (Lausanne, Luxemburg)

Nov 2018
Sept 2014

PhD Student, DHLAB, EPFL
Making large-scale art historical photo archives searchable: A deep learning approach, with Prof. Kaplan
Use of modern computer vision and image analysis techniques in order to allow art historians and archivists to digitize and navigate large iconographic collections.

Aug 2014
Sept 2013

Scientific assistant CVLAB EPFL
FastScan Project, with Prof. Fua
Implemented a fast multi-threaded prediction algorithm for mitochondria segmentation in SEM images. A prototype of integration directly with the software of a Microscope showed promising result in accelerating the scanning of biological tissues.

Feb-Aug 2013

Master Thesis at IBM Research, Zurich
Estimating VLSI pattern sensitivity with respect to variability in optical lithography printing, with Dr. Gabrani
Developed an automatic analysis tool for the success and the variability of the lithography printing process for a specific pattern (based on image analysis of SEM images and error evaluation). Showed how VLSI patterns react differently according to variations in the printing conditions.

Apr-Sept 2011

Internship at Carnegie Mellon University, Pittsburgh
Unsupervised object detection with an eye-tracking system, with Prof. Hebert

Skills

Areas:	Machine Learning, Computer Vision, Image Processing, back-end infrastructure.
Programming Languages:	Python (advanced), C++, Java, Javascript.
Programming Tools:	Tensorflow/PyTorch (advanced), UNIX systems, SQL databases, Django.

Education

2014-2018	PhD in Computer Science, **EPFL**, Lausanne
2011-2013	Master of Science in Computer Science, **EPFL**, Lausanne *Very High Honours*, Gpa: 5.53/6.0
2008-2013	Diplôme d'Ingénieur, **École Polytechnique ParisTech**, Palaiseau Gpa: 3.5/4.0
2006-2008	Preparatory Classes, **Lycée du Parc**, Lyon Gpa: 3.92/4
2006	Scientific Baccalaureate, **Lycée Charles Nodier**, Dole *Very High Honours*

Languages

French:	Mothertongue
English:	Fluent, TOEFL IBT 106/120, prior to a 5 months stay in the USA.
Japanese:	Basic Knowledge, JLPT N4 (equivalent of CEFR A2). Two months stay in 2010.

Extra curricular activities

Piano:	*Certificat de fin d'étude*, awarded with very high honors in 2005.
Choir:	Has been part of multiple choruses, in Paris and Lausanne. Member of the organizing team of the Lausanne's University Choir from 2013 to 2017. Responsible for the organization of a classical concert attended by 2'000+ persons in 2017.
Robotics:	In 2009, as the vice-chairman of the robotics association of the École Polytechnique, led a team of 12 persons to the French Robotics Cup for a top-15% finish.

Awards

- Qualified for the final round of Google Hashcode 2016 (top-50 out of 1000+ teams)
- Best Demonstration Award at the Research Days of the CS Faculty of EPFL in 2017.

Publications

M. Gabrani, B. Seguin, H. Saab Estimating pattern sensitivity to the printing process for varying dose/focus conditions for RET development in the sub-22nm era, in *Metrology, Inspection, and Process Control for Microlithography XXVIII*, 2014

I. diLenardo, B. Seguin, F. Kaplan Visual Patterns Discovery in Large Databases of Paintings, in *Digital Humanities Conference* 2016, Krakow

B. Seguin, C. Striolo, I. diLenardo, F. Kaplan Visual Link Retrieval in a Database of Paintings, in *VISART Workshop at European Conference of Computer Vision* 2016, Amsterdam.

B. Seguin, I. diLenardo, F. Kaplan Tracking Transmission of Details in Paintings, in *Digital Humanities Conference* 2017, Montréal.

W. Haaswijk*, E. Collins*, B. Seguin*, M. Soeken, S. Süsstrunk, F. Kaplan, S. De Micheli Deep Learning for Logic Optimization, in *International Workshop on Logic & Synthesis* 2017.

B. Seguin The Replica Project: Building a visual search engine for art historians, in *ACM XROADS Magazine* Spring 2018.

B. Seguin, L. Costiner, I. diLenardo, F. Kaplan New Techniques for the Digitization of Art Historical Photographic Archives—the Case of the Cini Foundation in Venice, in *Archiving* 2018, Washington DC.

B. Seguin, L. Costiner, I. diLenardo, F. Kaplan Extracting and Aligning Artist Names in Digitized Art Historical Archives, in *Digital Humanities Conference* 2018, Mexico.

W. Haaswijk*, E. Collins*, B. Seguin*, M. Soeken, S. Süsstrunk, F. Kaplan, S. De Micheli Deep Learning for Logic Optimization Algorithms, in *International Symposium on Circuits and Systems* 2018.

S. Ares Oliveira*, B. Seguin*, F. Kaplan dhSegment: A generic deep-learning approach for document segmentation, in *International Conference on Frontiers in Handwriting Recognition* 2018, Niagara Falls.

B. Seguin Making large art historical photo archives searchable, *EPFL PhD Thesis* 2018.