

## Resume

### Personal Details

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**Nationality** Switzerland

### Work Experience

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- 09/2016- **Qualcomm Research, San Diego CA: Software Engineer** (13 months)  
09-2017 Enable powerful deep learning algorithms on Qualcomm's Snapdragon SoC. My research in fixed point neural networks has helped to significantly improve both the accuracy and speed of on-target image recognition.
- 06/2013- **SIX Payment Services, Biel, Switzerland: Embedded Software Engineer** (14 months)  
07/2014 Application software development in C and C++ for EFTPOS transactions
- 08/2012- **Technion, Israel: Internship** (2 months)  
09/2012 Runtime optimization of a tracking algorithm for ultrasound clips

### Graduate Research

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- 09/2014- **Master's Thesis**  
05/2016 My thesis focused on the hardware acceleration of deep learning algorithms. Convolutional neural networks (CNN) have achieved state-of-art performance in many image processing applications. I worked on reducing the resource demands of CNN inference by using reduced precision arithmetic.
- 09/2015- **Open Source Project: Ristretto**  
06/2016 I am the author of Ristretto, a framework for approximation of convolutional neural networks (CNN). Ristretto has been viewed over 1,000 on Github. Companies like Qualcomm, Intel, Xilinx, Cadence, Samsung use Ristretto or experimented with the tool. Ristretto has the following strengths:
- **Automation:** Ristretto performs automatic approximation of any trained CNN
  - **Flexibility:** Various approximation schemes are supported
  - **Accuracy:** Ristretto fine-tunes condensed networks to increase classification accuracy
  - **Speed:** Ristretto runs on the GPU and leverages optimized CUDA routines

### Education

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- 09/2014- **M.Sc. in Electrical and Computer Engineering, University of California, Davis** (2 years)  
06/2016
  - Master's thesis: Hardware acceleration of neural networks under supervision of Professor Soheil Ghiasi
  - Coursework: Artificial Intelligence, Parallel Algorithms, High Performance Computer Architecture, VLSI Digital Signal Processing, and other courses GPA: 4.0/4.0
- 09/2009- **B.Sc. in Electrical Engineering, Bern University of Applied Sciences (BFH), Switzerland** (3 years)  
08/2012
  - Thesis: Development of a test bench for programmable logic controllers (PLCs)
  - Coursework: Analysis, Linear Algebra, Physics, Informatics, Networks and Circuits, High Voltage Techniques, Modern Power Converters, EMC (place 5 of 66 students)

### Other Notable Information

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- Notable publication: P. Gysel, M. Motamedi, S. Ghiasi. "Hardware-Oriented Approximation of Convolutional Neural Networks". ICLR Workshop, 2016.
- Programming languages and software tools: C++, Caffe, TensorFlow, CUDA, Python, Java, Matlab