Olivier VALERY

Deep Learning Researcher – Ph.D

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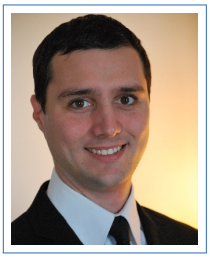

Professional Experiences

2016 – Present **Deep Learning Researcher**, Research Center for Information Technology Innovation (Academica Sinica), Taiwan, *Managed a team of 2 researchers*.

- Designed and implemented a Deep Learning system specifically designed for performing training and prediction tasks, i.e., image recognition, on mobile device's System-on-Chip
- Sped up Deep Learning processes on embedded devices by 80% via the use of Transfer Learning
- Reduced the memory consumption of Deep Learning framework on mobile devices by a factor of 3 via the use of low-precision arithmetic

2013 – 2015 **Deep Learning Researcher**, Institute for Information Industry, Taiwan, *Managed a team of 2 researchers*.

- Designed and implemented a parallel PCA-based machine-learning system for CPU-GPU system, on a mobile device, which is 70% faster than state-of-the-art libraries
- Designed and implemented a partial computation offloading system, for CPU-GPU system in a mobile cloud computing context, which is 20% faster than state-of-the-art offloading frameworks

06-2011 – 02-2012 **Cloud Computing Engineer**, Industrial Technology Research Institute, Taiwan.

- Worked on a Cloud OS system, and more specifically on the Physical Resource Management node (PRM), which provides the foundation software services (PXE, DHCP, DNS, kickstart, etc), and manage the deployment of the Cloud OS
- Main objectives:
  1. Created python script to automate the deployment of the Cloud OS
  2. Sped up the Cloud OS deployment system by 30% via the remote installation of prebuilt images using rsync, Multicast, or BitTorrent transport
  3. Developed a Cloud OS deployment system specific to diskless environments

Personal Projects

Generative Adversarial Network Novel objects generation via Bicycle GAN and with modified loss function, Comics colorization via Pix2pix, Selfie enhancement via Cycle-GAN, Image superresolution via SRGAN

Convolutional Neural Network Car detection via YOLO model, Age-gender classification, Face swapping via Deep Fakes, Face recognition using Siamese Neural Network, Art generation with neural style transfer

Recurrent Neural Network English to french translator via character-level language model, Bitcoin price prediction via sequence-to-sequence learning and sentiment learning, Jazz generation with LSTMs, Emojifier via sentiment learning, Neural machine translation with attention, Trigger Word Detection for speech recognition

Education

2012 – Present **National Taiwan University, Taiwan**, *TOP 22 in Computer Science (ARWU 2014)*, Department of Computer Science and Information Engineering, Ph.D candidate.

2010 – 2012 **Université du Québec à Chicoutimi, Canada**, *Department of Computer Sciences and Mathematics*, Master.

2006 – 2012 **EPF-Graduate School of Engineering, France**, *Specialization in Information and Communication Systems Management*, Engineer degree.

Computer Skills

Programming Languages	Python, C, C++, Java, OpenCL, CUDA
Data Science	Deep Neural Network, Convolutional Neural Network, Recurrent Neural Network (LSTM, GRU), Generative Adversarial Network, traditional machine learning algorithms (k-mean, SVM, PCA, LDA, HOG, Decision Tree), t-SNE
Deep Learning Framworks	Tensorflow, Keras, Pytorch, Caffe
Data Science Libraries	NumPy, SciPy, Pandas, Matplotlib, SciKit-Learn, XGBoost
Deep Learning Cloud Solutions	Amazon Web Services, Google Cloud Platform, Floydhub
Virtualization Solutions	Docker, Nvidia-Docker, VMware
Blockchain Technology	Bitcoin, Ethereum, Smart contract

Languages

French	Native language
English	Fluent
Chinese	Conversant (B2)
Spanish	Good command

Publications

PDP 2018 Cambridge — **Low Precision Deep Learning Training on Mobile Heterogeneous Platform**,
Olivier Valery, Pangfeng Liu, and Jan-Jan Wu.

JPDC 2018 *Journal* — **A Collaborative CPU-GPU Approach for Principal Component Analysis on Mobile Heterogeneous Platforms**,
Olivier Valery, Pangfeng Liu, and Jan-Jan Wu.

CTHPC 2018 Taiwan — **Deep Learning with Limited Numerical Precision on Mobile Devices**,
Olivier Valery, Pangfeng Liu, and Jan-Jan Wu.

ICPADS 2017 Shenzhen — **CPU/GPU Collaboration Techniques for Transfer Learning on Mobile Devices**,
Olivier Valery, Pangfeng Liu, and Jan-Jan Wu.

CC-PE *Journal* — **A Collaborative CPU-GPU Approach for Deep Learning on Mobile Devices**,
Olivier Valery, Pangfeng Liu, and Jan-Jan Wu, (Under revision).

CTHPC 2016 Taiwan — **An OpenCL Framework for Partial Workload Offloading in a Mobile Cloud Computing Environment**,
Olivier Valery, Ju-Cheng Chou, Yulin Tsao, Pangfeng Liu, and Jan-Jan Wu.

SOCA 2015 Rome — **A Partial Workload Offloading Framework in a Mobile Cloud Computing Context**,
Olivier Valery, Ju-Cheng Chou, Yulin Tsao, Pangfeng Liu, and Jan-Jan Wu.

ICS 2014 Taiwan — **Adaptive OpenCL Computation Offloading Framework on Mobile Device**,
Olivier Valery, Wei-Shu Hung, Ju-Cheng Chou, Pangfeng Liu, and Jan-Jan Wu.