JB Boin

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Ph.D. graduate with an expertise in deep learning, and extensive experience in computer vision, mobile visual search, augmented reality.

Education

***Stanford University*, Ph.D., Electrical Engineering** 2012-2019
Graduated from the *Image, Video and Multimedia Systems* research group (advisor: Bernd Girod). GPA: 4.05/4.00

***Stanford University*, M.S., Electrical Engineering** 2012-2014

***École polytechnique (France)*, B.S.** 2009-2012
Multidisciplinary training and specialization in Electrical Engineering. GPA: 4.18/4.00

Work Experience

***CrowdAI* (California, USA)** 2019 (current)
Machine learning research engineer 2019-2021
Head of Machine Learning 2021 (current)

- Managed a team in charge of building and maintaining the machine learning part of a platform for automatic model training and inference
- Implemented deep learning model architectures and training processes to solve novel tasks (object detection, classification, keypoint detection, instance segmentation)
- Executed on various customer projects by supporting data preprocessing, model training, predictions and evaluation
- Stayed up-to-date with and synthesized published research, authored a research publication (NeurIPS workshop 2020)

***Google* (California, USA)** Jun-Sep 2017
Intern in the Mobile Vision research team

- Integration and enhancements of existing systems for multi-object tracking

***Stanford University* (California, USA)** 2013-2019
Teaching assistant, Grader

***STMicroelectronics* (France)** Apr-Aug 2012
Intern in a research team specialized in radiation hardened and ultra-low voltage hardware design

- Elaboration of a custom test protocol to be run on microprocessors for evaluation of their robustness to error

***Red Tech Consulting* (Saudi Arabia)** Jul-Aug 2011
Junior consultant in a telecom consulting company for a project expanding the Saudi Internet network

Relevant Projects

***Image descriptor aggregation for Efficient Retrieval* (Ph.D. thesis)** 2015-2019
Developed a theoretical framework for aggregation and applied insights to real-world retrieval tasks

***Efficient Panorama Database Indexing for Indoor Localization* (CBMI 2019)** 2018-2019
Developed an end-to-end panorama database representation to maximize retrieval speed

***Recurrent Neural Networks for Person Re-identification Revisited* (MIPR 2019)** 2017-2018
Proposed a simplification of an existing video representation technique while increasing retrieval performance

***Art++* (supported by the Brown Institute for Media Innovation)** 2014-2016
Responsible for the technical part on the development of a platform for creation of AR museum tours
Developed a mobile application using state-of-the-art vision algorithms

***Effective Fisher Vector Aggregation for 3D Object Retrieval* (ICASSP 2017)** 2015-2016
Developed an image-based retrieval system achieving high compression of a video database

Honors and Awards

- Best Paper Session, CBMI (*Efficient Panorama Database Indexing for Indoor Localization*) 2019
- Best Paper Award, MIPR (*Recurrent Neural Networks for Person Re-identification Revisited*) 2019
- Best Paper Award for Industry, ICIP (*Depth Augmented Stereo Panorama for Cinematic VR with Focus Cues*) 2016
- SCIEN Industry Affiliates Meeting: Apple Poster Award (*Depth Augmented Stereo Panoramas for Cinematic VR*), Intel Poster Award (*Art++: Augmented reality in museums*) December 2015
- Ranked 6th/135 at the Stanford Electrical Engineering Ph.D. qualifying examination January 2013
- First rank at the École polytechnique entrance examination July 2009

Skills

Programming: General purpose tools (Python, C++, MATLAB)
Machine learning frameworks (Tensorflow/Keras, Torch/PyTorch, Caffe)
Mobile development (Android: Java and native C++)
Basics in front-end and back-end web development (HTML, CSS, JavaScript, PHP, MySQL)

Languages: English (fluent); French (native); Italian (intermediate); Turkish (intermediate); Japanese (basic)