Emanuele Ghelfi

Curriculum Vitae

Overview

My current role is Staff Algorithm Engineer @ VisLab, Ambarella. I am currently involved in topics like Object Detection, Tracking and Forecasting; Sensor Fusion; Sensor Calibration; Radar Processing.

Education

2016–2018 **M.Sc. Computer Science and Engineering**, *Politecnico di Milano*, Artificial Intelligence Track, *110L/110*.
Thesis: "Reinforcement Learning in Configurable Environments: an information theoretic approach" (accepted at ICML 2019). Supervisors: Marcello Restelli, Alberto Maria Metelli.
- Thesis: politesi.polimi.it/handle/10589/144736
- Code: github.com/albertometelli/remps
- Slides: slideshare.net/EmanueleGhelfi/reinforcement-learning-in-configurable-environments

2013–2016 **Bachelor Degree in Computer Science and Engineering**, *Politecnico di Milano*, Cremona, *110L/110L*.

2008–2013 **Scientific High School Diploma**, *Liceo Scientifico Tecnologico A. Berenini*, Fidenza, *100/100*.

Experience

2023–present **Staff Algorithm Engineer**, VisLab, Ambarella, Parma.

2021–present **Senior Algorithm Engineer**, VisLab, Ambarella, Parma.

2020–2021 **Machine Learning and Computer Vision Engineer**, Deep Vision Consulting, Modena.

2018–2020 **Machine Learning and Computer Vision Engineer**, Zuru Tech Italy, Modena.

Publications

28-06-2019 **A Survey on GANs for Anomaly Detection.** arXiv e-print. arxiv.org/abs/1906.11632.

27-06-2019 **Adversarial Pixel-Level Generation of Semantic Images.** arXiv e-print. arxiv.org/abs/1906.12195.

01-05-2019 **Reinforcement Learning in Configurable Continuous Environments.** Proceedings of the 36th International Conference on Machine Learning (ICML 2019). proceedings.mlr.press/v97/metelli19a.html.

Talks

02-09-2019 **Deep Diving into GANs: From Theory to Production with TensorFlow 2.0.** EuroSciPy 2019, Bilbao, Spain.
- EuroSciPy: pretalx.com/euroscipy-2019/talk/Q79NND/
- Github: github.com/zurutech/gans-from-theory-to-production
- Slides: slideshare.net/EmanueleGhelfi/euroscipy-2019-gans-theory-and-applications

04-05-2019 **Deep Diving Into GANs: From Theory To Production.** PyConX 2019, Florence, Italy.
- PyConX: pycon.it/conference/talks/deep-diving-into-gans-form-theory-to-production
- Github: github.com/zurutech/gans-from-theory-to-production
- Slides: slideshare.net/EmanueleGhelfi/gan-theory-and-applications-143737572

Awards

2013 Scholarship "Percorsi di Eccellenza" during Bachelor Degree at Politecnico di Milano. Scholarship for worthy students.

Projects

2018 **Learning to Run**, *Deep Learning Project*.
Topics: Deep Reinforcement Learning.
- Code: github.com/MultiBeerBandits/learning-to-run
- Video: youtube.com/watch?v=HVOrhxypOGg
- Slides: slideshare.net/EmanueleGhelfi/learning-to-run-138950609

2018 **Computer Vision for Computer Art. A pencil writing on a virtual plane**, *Image Analysis and Computer Vision Project*.
Topics: Image Analysis, Feature Extraction, Tracking, Camera Calibration, 3D reconstruction.
- Code: github.com/EmilianoGagliardiEmanueleGhelfi/inkless-painting
- Video: youtube.com/watch?v=U7XAzXeBx-U

2017 **Recommender System Challenge @ Polimi: Music Recommendation**, *Recommender Systems Project*.
Topics: Machine Learning, Recommender System, Personalized Recommendation.
- Code: github.com/MultiBeerBandits/recsys_challenge_2017
- Slides: slideshare.net/EmanueleGhelfi/recommender-system-challenge

2017 **CNN Quantization - Performance Evaluation**, *Advanced Computer Architecture Project*.
Topics: Convolutional Neural Networks, Quantization, Performance, Cache, Tensorflow, Caffe.
- Code: github.com/EmilianoGagliardiEmanueleGhelfi/CNN-compression-performance
- Slides: slideshare.net/EmanueleGhelfi/cnn-quantization

Competences

Programming Languages.
- Python
- C++
- C
- Matlab
- C #

Machine Learning Frameworks.
- PyTorch
- Tensorflow

Languages

Italian Mother tongue

English Intermediate *level B2 with TOEIC certification (475 Listening + 470 Reading = 945/990)*

Privacy

In compliance with the Italian legislative Decree no. 196 dated 30/06/2003, I hereby authorize you to use and process my personal details contained in this document.