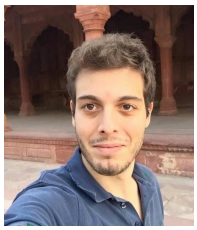
europass Curriculum vitae

PERSONAL INFORMATION

Fausto Milletarì



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Sex Male | Date of birth 17/10/1987 | Nationality Italian

EDUCATION AND TRAINING

01/10/2013–Present

Ph.D. In Informatics

EQF level 8

Chair for computer aided medical procedures - Technische Universität München, Munich (Germany)

Ph.D. in informatics with special focus on medical image analysis and computer vision. The main objective of my research is twofold:

- automatically localise and segment the human midbrain in ultrasound volumes
- perform automatic early stage diagnosis of parkinson disease from ultrasound scans

Several works (see publications) dealing with object tracking, segmentation of ultrasound and MRI images and registration have been proposed and accepted in peer-reviewed conferences and scientific journals.

01/10/2011–15/11/2013

Master of Science In Informatics with high distinction

EQF level 7

Technische Universität München
Arcisstraße 21, 80333 München (Germany)

Achieved with grade 1,2 (high distinction) (link certificate) (link transcripts) [scale: 1.0 to 5.0]

My studies during the master were specially focused on medical image analysis, computer vision, machine learning and algorithms for scientific computing. I also took part to courses about GPU programming and microprocessors architectures.

01/10/2006–12/05/2011

Bachelor Degree in Engineering

EQF level 6

Università di Pisa
via diotisalvi n.2, 56100 pisa (Italy)

Computer Science/Engineering (link certificate)

During my bachelor I have acquired basic competences in the field of engineering and in particular computer architectures, telecommunications and programming. My bachelor thesis dealt with machine learning and in particular with neural networks.

WORK EXPERIENCE

04/07/2016–Present

Deep Learning Scientist

4Catalyzer corp., New York (United States)

Deep learning in medical imaging. Working on ultrasound data for Butterfly Network inc. I'm a holder of a O-1 visa (extraordinary abilities) and work permit.

01/10/2013–04/07/2016

PhD Student/Researcher - Computer Aided Medical Procedures

Technische Universität München, Munich (Germany)

01/11/2012–15/07/2013

Research assistant

Technische Universität München, Munich (Germany)

PERSONAL SKILLS

Mother tongue(s): Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
German	B1	A2	A2	A2	A2
English	C1	C1	C1	C1	C1
	IELTS General Training (April 2011) - 7.0 IELTS Academic (June 2011) - 7.0				

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user
Common European Framework of Reference for Languages

Communication skills

Conference presentations (Orals and Posters):

- Short oral/poster session at MICCAI 2013, Nagoya, Japan.
- Poster presentation at MICCAI 2014, Boston, USA.
- Oral presentation at CETUS2014 (MICCAI2014 challenge), Boston, USA.
- Short oral/poser presenter at IPCAI 2015, Barcelona, Spain.
- Poster presentation at BMVC 2015, Swansea, UK.
- Short oral/poster session at MICCAI 2015, Munich, Germany.
- Oral session at GTC2016, San Jose, California.

Several other presentations in the scope of various workshops and minor scientific events organised or endorsed by the chair.

Organisational / managerial skills

- Founder and main organiser of the "*Computer Vision and Medical Image Analysis*" meetup group of Munich (Link).
- Took part to the organisation of MICCAI 2015 in Munich.
- Organiser and main lecturer of the "M*achine Learning in Medical Imaging*" course at Technical University of Munich, winter semester 2015.

Job-related skills

Research topics:

- Computer vision
- Medical image analysis
- Computer aided interventions and diagnosis
- Machine learning
  - Classic approaches such as Random forests, Hough forests, SVM, Boosting
  - Sparse coding, auto-encoders
  - Density estimation, clustering, subspace methods
  - Deep Convolutional Neural Networks for images/volumes
  - Convolutional autoencoders
  - Deep reinforcement learning
  - Adversarial training strategies

Selected projects:

- Trans-cranial ultrasound for early diagnosis of Parkinson Disease - segmentation of ultrasound volumes and computer assisted diagnosis
- Segmentation of echocardiographic images in the scope of the "CETUS" MICCAI 2014 challenge
- Prostate segmentation in trans-rectal ultrasound
- Registration of multimodal (US-MRI) medical images - Management of brain-shift during brain

tumour resection procedures

- Visual object tracking in computer vision using sparse-coding and a voting based strategy
- Medical volumetric data segmentation (V-Net)

Teaching:

- Tutor for the exercises of "Tracking and Detection in Computer Vision", TU München, 2012-2015.
- Tutor for practical course "Machine learning in medical imaging", TU München, 2014-2015.
- Guest lecturer for the course of Interventional Imaging, TU München, 2014
- Lecturer for the practical course "Machine learning in medical imaging", TU München winter 2015.

Digital competence

Programming languages:

- Matlab (extensive knowledge)
- C++ (good knowledge)
- Python (extensive knowledge)
- Swift (basic knowledge)

Tools:

- Xcode (basic knowledge)
- PyCharm (extensive knowledge)
- GIT and SVN (extensive knowledge)
- LaTeX (extensive knowledge)
- Linux/Unix systems (extensive knowledge)
- Windows systems (basic knowledge)

ADDITIONAL INFORMATION

Publications

F. Milletari, J. Jia, A. Rothberg, M. Sofka

Integrating statistical prior knowledge into convolutional neural network through PCA
Accepted paper at MICCAI 2017

F. Milletari, N. Navab, A. Ahmadi
V-Net: Fully Convolutional Neural Networks for Volumetric Medical Image Segmentation
International Conference on 3DVision (3DV), Stanford University, California, USA, October 2016, arXiv:1606.04797 (bib)

F. Milletari, A. Ahmadi, C. Kroll, C. Hennersperger, F. Tombari, A. Shah, A. Plate, K. Bötzel, N. Navab
Robust Segmentation of Various Anatomies in 3D Ultrasound Using Hough Forests and Learned Data Representations *MICCAI 2015, the 18th International Conference on Medical Image Computing and Computer Assisted Intervention* (bib)

F. Milletari, F. Tombari, S. Ilic, W. Kehl, A. Ahmadi, N. Navab
Universal Hough dictionaries for object tracking
British Machine Vision Conference (BMVC), Sussex, UK, September 2015 (bib)

F. Milletari, V. Belagiannis, N. Navab, P. Fallavollita
Fully automatic catheter localization in C-arm images using l1- Sparse Coding
Proceedings of the 17th International Conference on Medical Image Computing and Computer Assisted Interventions (MICCAI), Boston, September 2014 (bib)F.

F. Milletari, M. Yigitsoy, N. Navab, A. Ahmadi
Left Ventricle Segmentation in Cardiac Ultrasound Using Hough-Forests With Implicit Shape and Appearance Priors
MICCAI Challenge on Endocardial Three-dimensional Ultrasound Segmentation (CETUS), Boston, MA, September 2014 (bib)

F. Milletari, N. Navab, P. Fallavollita
Automatic detection of multiple and overlapping EP catheters in fluoroscopic sequences
Proceedings of the 16th International Conference on Medical Image Computing and Computer Assisted Interventions (MICCAI), Nagoya, Japan, September 2013 (bib)

F. Milletari, A. Ahmadi, C. Kroll, A. Plate, , , , , , K. Bötzel, N. Navab
Hough-CNN: Deep Learning for Segmentation of Deep Brain Regions in MRI and Ultrasound
Computer Vision and Image Understanding (2017). (bib)

G. Bortsova, M. Sterr, L. Wang, F. Milletari, N. Navab, A. Boettcher, H. Lickert, F. Theis, T. Peng
Mitosis Detection in Intestinal Crypt Images with Hough Forest and Conditional Random Fields
7th International Workshop on Machine Learning in Medical Imaging (MLMI), Athena, Greece, October 2016 **(bib)**

W. Kehl, F. Milletari, F. Tombari, S. Ilic, N. Navab
Deep Learning of Local RGB-D Patches for 3D Object Detection and 6D Pose Estimation
European Conference On Computer Vision (ECCV), Amsterdam, The Netherlands, October 2016 (bib)

C. Kroll, F. Milletari, N. Navab, A. Ahmadi
Coupling Convolutional Neural Networks and Hough Voting for Robust Segmentation of Ultrasound Volumes
Accepted at GCPR 2016 (bib)

[Under Review] M. Riva, C. Hennersperger, F. Milletari, A. Katouzian, F. Pessina, B. Gutierrez-Becker, N. Navab, L. Bello
3D intraoperative Ultrasound and MR image-guidance: pursuing an ultrasound-based management of brain shift to improve neurosurgical navigation
Neurosurgery

O. Bernard, ..., F. Milletari, A. Ahmadi, et al.
Standardized evaluation system for left ventricular segmentation algorithms in 3D echocardiography
Institute of Electrical and Electronics Engineers IEEE Transactions on Medical Imaging (bib)

Christoph Baur, F. Milletari, V. Belagiannis, N. Navab, P. Fallavollita
Automatic 3D reconstruction of electrophysiology catheters from two-view monoplane C-arm image sequences
The 6th International Conference on Information Processing in Computer-Assisted Interventions (IPCAI) (bib)

O. Zettinig, A. Shah, C. Hennersperger, C. Kroll, H. Kübler, T. Maurer, F. Milletari, C. Schulte zu Berge, E. Storz, B. Frisch, N. Navab
Multimodal Image-Guided Prostate Fusion Biopsy based on Automatic Deformable Registration
6th International Conference on Information Processing in Computer-Assisted Interventions (IPCAI), Barcelona, June 2015 (bib)

A. Ahmadi, F. Milletari, N. Navab, M. Schuberth, A. Plate, K. Bötzel
3D Transcranial Ultrasound as a Novel Intra-operative Imaging Technique for DBS surgery - A Feasibility Study
In Proc. 6th International Conference on Information Processing in Computer-Assisted Interventions (IPCAI), Barcelona (SP), June 24, 2015 (bib)

Grants

(x2) NVidia hardware grant program - Tesla K40 granted by Nvidia to support our research aiming to apply deep learning to medical image analysis (link).

BaCaTec - Grant for establishing a collaboration between CAMP@TUM and University of Berkeley

Seminars

Eight Joint Advanced Student School (JASS 2012) - San Petersburg 2012 (link)

Medical Technology Entrepreneurship - Munich 2013 (link)

International Computer Vision Summer School (ICVSS) - Calabria 2013

Medical Imaging Summer School (MISS) - Sicily 2013