Valsamis Ntouskos-Curriculum Vitae

Part I – General Information

Full Name	Valsamis Ntouskos
E-mail	valsamis.ntouskos@unimercatorum.it

Part II – Education and Habilitation

Type Yea	Institution/Entity	Notes (Degree, Experience,)
University graduation 200		M. Eng. Diploma in Rural and Surveying
	University of Athens	
		Diploma Thesis: Automatic Camera Cali-
		bration of Digital Cameras based on Regu-
		lar Planar Patterns.
		Supervisor: Prof. George Karras
University graduation 200	University of Rome	B. Eng. in Electronics Engineering
	"La Sapienza"	(110/110 e lode)
		Bachelor Thesis: A Randomized Approach
		for the Path Planning of Controlled UAVs.
		Supervisor: Prof. Giuseppe Oriolo
University graduation 201	2 University of Rome	M. Sc. Eng. in Artificial Intelligence and
	"La Sapienza"	Robotics (110/110 e lode)
	<u> </u>	Master Thesis: MoCap based Action
		Recognition.
		Supervisor: Prof. Fiora Pirri
Ph.D. 201	6 University of Rome	Ph.D. in Engineering in Computer Science
	"La Sapienza"	(con lode)
		Ph.D. Thesis: Inverse Problem Theory in
		Shape and Action Modeling.
		Advisor: Prof. Fiora Pirri
Abilitazione Scien- 202	Italian Ministry of	Settore Concorsuale: 09/H1
tifica Nazionale	Education, Universi-	2ª fascia
	ties and Research	

Part III - Appointments

 $IIIA-A cademic\ Appointments$

Start	End	Institution	Position
11/2015	01/2017	Department of Computer, Control and	Graduate Research Assistant
		Management Engineering Antonio	
		Ruberti, University of Rome	
		"La Sapienza"	

02/2017 01/2020	Department of Computer, Control and Management Engineering Antonio Ruberti, University of Rome "La Sapienza"	Fixed-term Researcher (Ricercatore a tempo determinato di tipo A)
02/2020 02/2022	Remote Sensing Lab, School of Rural and Surveying Engineering, National Technical University of Athens	Research Fellow
03/2022 02/2024	Remote Sensing Lab, School of Rural and Surveying Engineering, National Technical University of Athens	Research Fellow (MSCA-IF)
03/2023 08/2023	School of Rural and Surveying Engineering, National Technical University of Athens	Adjunct Professor
07/2024	Universitas Mercatorum	Associate Professor

IIIB – Other Appointments

Start 03/2013	End 02/2014	Institution Department of Computer, Control and Management Engineering Antonio Ruberti, University of Rome "La Sapienza"	Position Collaborator
08/2014	07/2015	Department of Computer, Control and Management Engineering Anto- nio Ruberti, University of Rome "La Sapienza"	Collaborator
10/2015	10/2015	Department of Computer, Control and Management Engineering Anto- nio Ruberti, University of Rome "La Sapienza"	Collaborator

Part IV – Teaching experience

Year	Institution	Lecture/Course
2013-	University of Rome	Vision and Perception (6 ECTS) (Teaching
2016	"La Sapienza"	Assistant), M. Sc. Eng. in Artificial
		Intelligence and Robotics
2017	University of Rome	Laboratorio di Programmazione (3 ECTS) –
<u></u>	"La Sapienza"	Laurea in Ingegneria delle Comunicazioni
2017	University of Rome	Machine Learning (3 ECTS), M. Sc. Eng. in
	"La Sapienza"	Artificial Intelligence and Robotics
2018	University of Rome	Fondamenti di Informatica (6 ECTS), Laurea
	"La Sapienza"	in Ingegneria Gestionale
2019	University of Rome	Fondamenti di Informatica (6 ECTS), Laurea
	"La Sapienza"	in Ingegneria Gestionale
2019	University of Rome	Machine Learning (3 ECTS), M. Sc. Eng. in
	"La Sapienza"	Artificial Intelligence and Robotics

2023	National Technical University of Athens	Photointerpretation & Remote Sensing (4.5 ECTS), Diploma in Rural, Surveying and Geoinformatics Engineering
2023	National Technical University of Athens	Geospatial Big Data Analytics (5 ECTS), Masters in Geoinformatics, Data Science and Machine Learning, Mathematical Modeling in Modern Technologies
2023	Università Ca' Foscari Venezia	Sistemi Informatici per il Turismo (6 ECTS), Laurea Magistrale "Sviluppo Interculturale dei Sistemi Turistici"
2024	National Technical University of Athens	Geospatial Big Data Analytics (5 ECTS), Masters in Geoinformatics, Data Science and Machine Learning, Mathematical Modeling in Modern Technologies

Other teaching activities

Year	Organizer	Lecture/Course
2018	Advanced School in Artificial Intelli-	Introduction to Machine Learning (3 seminars
	gence – CNR-ISTC	– 12 hours)
2020	World UAV Federation – Hellenic	3D modeling using UAVs (2-day seminar –
/2022	Chapter	16 hours)

Part V – Society memberships, Awards and Honours

Part v –	Society memberships, Awards and Honours
Year	Title
2009-	Member of the Technical Chamber of Greece (TEE)
present	
2014-	IEEE Student Member
2016	
2016-	Computer Vision Foundation Member
present	
2001-	Recipient of the yearly academic achievement scholarships awarded from the state
2006	scholarships foundation of Greece (IKY)
2001-	Recipient of the yearly academic achievement scholarships awarded from the Technical
2006	Chamber of Greece (TEE)
2001-	"Thomaidion" award – Highest average grade of the respective academic years for the
2006	course of Rural and Surveying Engineering
2002	"Chatzopoulou" award – Highest grade in the course of Descriptive Geometry for the
<u> </u>	course of Rural and Surveying Engineering
2003	"Papakyriakopoulou" award – Highest average grade in the courses of mathematics in
	the first two academic years for the course of Rural and Surveying Engineering
2006	"Chrisovergion" award for the Diploma Degree with the highest grade in Rural and Sur-
	vey Engineering for the academic year
2006	"Thomaidion" award for the best Diploma Thesis at the National Technical University
·	of Athens for the academic year 2005-2006
2011	Recipient of the award offered by Accenture for one student enrolled at the 2nd year of
	the M. Sc. Eng. in Artificial Intelligence and Robotics, University of Rome
	"La Sapienza"

2012-	Scholarship for the Ph.D. course in Engineering in Computer Science offered by the
2015	Italian Ministry of Education, University and Research, highest ranked applicant
2013	NSA funding for attending Graduate Summer School in Computer Vision 2013, organized by the Institute of Pure and Applied Mathematics, UCLA, Los Angeles, CA
2015	DCPRAM 2015 Best Ph.D. student award for the work: F. Natola, V. Ntouskos and F. Pirri, "Collaborative Activities Understanding from 3D Data"
2019	IJCAI-2019 Distinguished program committee member
2020	National Scholarship Foundation of Greece (IKY), 2-year Research Fellowship
2021	ICLR 2021 Outstanding reviewer
2021	CVPR 2021 Outstanding reviewer

Part VI - Funding Information [grants as PI-principal investigators or I-investigator]

Year 7	Γitle	Program
2017- 2020	[PI] - A virtual time machine for archaeological excavations	Sapienza Medium Scale Research Projects – Protocol nr: RM11715C8258D198
2020- 2022	[PI] - Multi-temporal remote sensing data processing using machine learning for the production of geospatial products	"Reinforcement of Postdoctoral Researchers - 2nd Cycle" (MIS-5033021), implemented by the State Scholarships Foundation (IKY), (Grant id: 17786)
2022- 2024	[PI] - Intelligent Scene Sensing and Analysis in Underwater Environments (iSEAu)	H2020 MSCA-IF (Grant id: 101030367)

Part VII - Participation in National and International Projects

EU H2020 MSCA-IF iSEAu (ID: 101030367) (2022-2024)

Role: Principal Investigator

Description: The project aims to significantly advance the state-of-the-art in underwater scene sensing and understanding by bridging the gap in the use of data-driven methods in underwater perception and by combining the advantages of multispectral, conventional and single-photon cameras.

EU H2020 FET Proactive RAMONES (101017808) (2021-2024)

Role: Work Package Leader

Description: The project concerns the design, development and validation of state-of-the-art instruments for the detection and monitoring of underwater radioactivity. Robotic vehicles that move in coordination both on the surface and inside the water will be equipped with these instruments with the aim of monitoring and mapping underwater radioactivity more accurately and efficiently.

EU H2020 Project iToBoS (965221) (2021-2025)

Role: Work Package Leader

Description: The project aims to develop an intelligent diagnostic platform for the early detection of melanoma. The platform includes a novel whole-body scanner and an innovative AI diagnostic platform to assist patient-tailored early diagnosis of potential melanoma by integrating data from multiple sources, including medical records, genomics, and in vivo imaging.

EU H2020 Project NEANIAS (863448) (2020-2022)

Role: Researcher

Description: The project concerns the co-design, development, delivery and integration into European Open Science Cloud (EOSC) of innovative thematic services, derived from state-of-the-art research in three key areas: underwater research, atmospheric research and space research.

EU H2020 Project SecondHands (643950) (2015-2020)

Role: Researcher

Description: The goal of the project is to design a humanoid robot that offers assistance to a maintenance technician by anticipating her needs. The vision is for the robot to provide an extra pair of hands when the technician needs help.

EU FP7 Project TRADR (609763) (2014-2018)

Role: Researcher

Description: Using a field-proven, user-centered methodology, the project develops new science and technology for mixed human-robot teams for disaster response, focusing on information preservation and reusage across multiple missions.

EU FP7 Project NIFTi (247870) (2013-2014)

Role: Researcher

Description: The project addresses the collaboration of mixed teams consisting of robots and humans who perform tasks together and interact with each other to achieve a common goal. The project focuses on the human factor in cognitive robotics and human-robot team interaction.

Part VIII - Research Activities

Topics: Deep Learning, Inverse Problems, Action Recognition, Remote Sensing, 3D Vision, Variational methods, Regularization theory, Convex Optimization, Non-parametric Bayesian methods, Computational Attention.

Research Focus

Deep Learning: I have explored different architectures of Deep Convolutional Neural Networks (DCNN) for human activity recognition, object detection and semantic segmentation, image inpainting. Regarding activity recognition, considering that the scene context very often provides crucial information for interpreting human activities in videos, we have proposed a method based on deep learning which combines state-of-the-art results in object detection and human pose estimation for boosting human activity recognition accuracy in videos. Regarding object detection and semantic segmentation, DCNN architectures were exploited which produce features suitable for recognizing semantically meaningful regions on objects belonging to various categories. Regards image inpainting, we have employed generative models based on deep architectures (generative adversarial networks and vision transformers) for spatio-temporal inpainting for object removal from images sequences and videos.

Inverse Problems: Large part of my research concerns inverse problem theory and the mathematical tools employed for the solution of ill-posed problems. More specifically, I have focused on regularization theory and on non-parametric Bayesian methods, as described in detail in the following paragraphs. In particular, my contributions regarded inverse problems emerging from applications in robotic and computer vision, which include the 3D modelling of articulated objects from images downloaded from the web, the 3D modelling of the surface of non-Lambertian objects from a single image,

the fusion of depth images and the dense 3D reconstruction of natural scenes, as well as the reconstruction of the 3D human pose from a single image and the recognition of human actions from 3D data. I am currently focusing on unifying aspects of inverse problem theory and learning theory, particularly for examining the inductive bias of deep learning models.

Action Recognition: I have worked extensively on the problem of human action recognition from 3D data. In this context, I have proposed different methods for the classification of basic and complex actions based on latent variable models and on non-parametric Bayesian methods. Specifically, I have contributed to the development of action recognition methods which allow for real-time and near real-time inference from limited training data and a small number of frames, while not requiring any temporal continuity. I have also worked on the problem of the recognition of collaborative actions performed by two or more subjects.

3D Vision: 3D reconstruction and modelling have been central topics in my research. A large part of my contributions regards sparse and dense 3D modelling not only of static scenes but also of articulated objects, as for example animals. More in detail, I have contributed to the development of a complete self-localization and 3D reconstruction pipeline for a head-mounted gaze estimation device. Moreover, the confidence driven regularization method I have proposed has been used for the variational fusion of depth images, which is a crucial part of the dense 3D reconstruction pipeline, giving excellent results. Additionally, I have contributed to developing methods which combine regularization theory and non-parametric Bayes in order to model complex objects as animals and non-Lambertian surfaces.

Variational methods and Regularization theory: I have considered variational methods based on regularization theory and in particular Total Variation (TV) and Total Generalized Variation (TGV) based approaches for the solution of various problems in finite and infinite dimensional spaces. My main contribution in this field regards the introduction of a confidence driven regularization method which allows for the automatic estimation of the confidence values based on the available data. This regularization method has as a result spatially adaptive regularization effects which depend on the spatial coherence of the data. Additional contributions include the dense 2.5D registration on Lie manifolds and the joint regularization of depth and normal fields for photo-consistency based 3D surface smoothing.

Convex Optimization: I have extensively used convex optimization theory and methods for the solution of non-smooth and non-linear optimization problems as the ones arising from TV and TGV regularization methods. More in detail, I have contributed to the extension of Primal-Dual Hybrid Gradient (PDHG) methods for spatially adaptive regularization weights as well as for biconvex functionals. Additionally, I have provided extensions of standard biconvex and non-convex optimization methods for the case of non-smooth functionals with spatially adaptive regularization weights. Particular focus has been given in introducing methods which can be massively parallelized in order to allow for GPGPU implementation.

Non-parametric Bayesian methods: I have used non-parametric Bayesian methods for unsupervised learning tasks. I have focused particularly on Dirichlet Process Mixture models (DPM) which can effectively capture the relations and the underlying structure of the features considered while at the same time they allow for real-time inference. By employing hierarchical and nested DPM models I have proposed methods for dealing with challenging inverse problems as the recognition of human actions from 3D pose data, the estimation of the 3D pose of a human subject from a single image and the inference of the 3D shape of non-Lambertian objects.

Computational Attention: Regarding Computational Attention I have worked on the problem of saliency prediction based on the coherence theory of attention and on the acquisition of 3D gaze data from human subjects in different scenarios. In this context, I have contributed to the development of the hardware and software modules of a 3D gaze estimation device with particular focus on developing novel gaze calibration as well as self-localization and dense 3D reconstruction methods.

Part IX – Academic Activities

Туре	Date D	etails
Associate Editor	2020	IEEE Robotics and Automation Society for ICRA 2020
Special Issue Editor	2022-2023	MDPI Mathematics – S.I. "Mathematical Optimization in Pattern Recognition, Machine Learning and Data Mining"
Senior Program Committee member	2021-2023	International Joint Conference on Artificial Intelligence – IJCAI
Top-tier Conference Reviewer	2021-2024	International Conference on Machine Learning - ICML
Top-tier Conference Reviewer	2021-2024	International Conference on Learning Representations - ICLR
Top-tier Conference Reviewer	2020-2023	Conference on Neural Information Processing Systems - NeurIPS
Top-tier Conference Reviewer	2019-2024	IEEE/CVF Int'l Conf. on Computer Vision and Pattern Recognition – CVPR
Top-tier Conference Reviewer	2019, 2021, 2023	IEEE/CVF Int'l Conf. on Computer Vision – ICCV
Top-tier Conference Reviewer	2020, 2022, 2024	European Conference on Computer Vision – ECCV
Top-tier Conference Program Committee member	2018-2023	International Joint Conference on Artificial Intelligence – IJCAI
Top-tier Conference Program Committee member	2019-2022	AAAI Conference on Artificial Intelligence
Conference Reviewer	2021	Winter Conference on Applications of Computer Vision - WACV
Conference Reviewer	2024	IEEE Int'l Geoscience and Remote Sensing Symposium - IGARSS
Conference Program Committee member	2018, 2020	European Conference on Artificial Intelligence – ECAI
Workshop organizer	Oct 2017	Image-based modeling of Articulated and Deformable Objects (IMADO), ICCV 2017
Workshop organizer	Nov 2019	Innovation Workshop Rome-Guangdong, Sapienza University of Rome
Workshop organizer	Apr 2021	Blue Research and Innovation Days
Mentoring	2020	Copernicus Hackathon Athens
Mentoring	2021	Blue Research and Innovation Days Hackathon

Invited talk	April 2016	Perceiving Systems, Max Planck Institute for Intelligent Systems, Tübingen
Invited talk	April 2016	School of Rural and Surveying Engineering, NTUA, Athens
Invited talk	May 2017	Post-graduate program in "Geospatial Technologies", TEI Athens, Athens
Invited talk	Jan. 2018	Dep. of Electronic Engineering, Chalmers University of Technology, Gothenburg, Sweden
Invited talk	Apr. 2019	Modern UAV Applications, UniWA, Greece
Invited talk	Sep. 2019	Department of Control and Computer Engineering, Polytechnic University of Turin, Turin
Invited talk	Sep. 2019	Adaptive Vision and Human Robot Collaboration Tutorial, 12 th International Conference on Computer Vision Systems (ICVS 2019), Thessaloniki, Greece
Invited talk	Jan. 2021	UAV as intelligent robot systems, Drone 3S Project conference (online)
Invited talk	March 2024	AI in Intelligent Sensing and Understanding in Underwater Environments
Journal reviewer	2014-present	IET Image Processing
Journal reviewer	2015	Computer Vision and Image Understanding
Journal reviewer	2020-present	IEEE Transactions on Artificial Intelligence
Journal reviewer	2015-present	IEEE Robotics and Automation Letters
Journal reviewer	2016	International Journal of Robotics and Automation
Journal reviewer	2017-present	MDPI Sensors
Journal reviewer	2017-present	MDPI Applied Sciences
Journal reviewer	2020-present	MDPI Remote Sensing
Journal reviewer	2020-present	IEEE Access
Journal reviewer	2022-present	IEEE TPAMI
Session chair	2013	International Conference on Pattern Recognition Applications and Methods
Session chair	2015	International Conference on Computer Graphics Theory and Applications
Summer school	2013	International Computer Vision Summer School 2013, Calabria, Italy
Summer school	2013	Graduate Summer School in Computer Vision 2013, organized by the Institute of Pure and Applied Mathematics, UCLA, Los Angeles, CA

Part X – Software projects

Title: iToBoS Clinical Melanoma Risk Assessment Tool

Brief description: Software for assessing the risk of developing first primary melanoma and

other skin cancers based on clinical data

Source: https://github.com/iToBoS/clinical-risk-assessment (private)

Title: NEANIAS UW-MAP service

Brief description: The service offers cutting-edge machine learning products for mapping sea-

bed classes from multispectral multibeam echosounder data.

Source: https://gitlab.neanias.eu/u3-service

Title: NEANIAS ATMO-STRESS service

Brief description: This cloud service represents regional trends on 2-D gridded map and reconstructs a paleostress trajectory map by implementing the polynomial and distance-

weighted methods from (Lee and Angelier, 1993).

Source: https://gitlab.neanias.eu/a2-service/a2-1-service

Title: NEANIAS ATMO-SEISM service

Brief description: Service for studying statistical correlations between radon and other gas

measurements with earthquakes and tectonic activity. Source: https://gitlab.neanias.eu/a2-service/a2-2-service

Title: Cloud Removal Transformers

Brief description: Cloud removal from multitemporal satellite images using axial transformer

networks.

Source: github.com/rslab-ntua/cloudtran

Title: Motion Primitive Discovery and Recognition

Brief description: Human primitives dataset and software for their automatic discovery and

recognition.

Source: github.com/alcor-vision/MotionPrimitives

Title: Fusion-based adversarial defense

Brief description: A method for defense against adversarial examples based on TGV-fusion

model, implemented in Tensorflow

Source: gitlab.com/mdouskos/adversarial-fusion (private)

Title: Prototypical Networks in TF

Brief description: A Tensorflow implementation of Prototypical Networks

Source: gitlab.com/mdouskos/prototypical-networks-tf (private)

Title: Context aware Activity Recognition

Brief description: An implementation of context aware activity recognition based on Faster-

RCNN.

Source: gitlab.com/alcor-vision/context-activity-recognition (private)

Title: Confidence Driven Depth Image Fusion

Brief description: A variational framework for spatially adaptive confidence-driven TGV fu-

sion of depth images, implemented in MATLAB and CUDA.

Source: github.com/alcor-vision/confidence-fusion

Title: Articulated Object Modeling

Brief description: A framework for the 3D modeling of articulated objects based on a hierarchical decomposition in components and aspects. Implemented in MATLAB and CUDA.

Source: github.com/alcor-vision/articulated-object-modeling

Title: FAUCCAL: Fully Automatic Camera Calibration Toolbox

Brief description: A MATLAB toolbox for fully automatic camera calibration of digital cam-

eras based on images of regular planar patterns.

Source: github.com/mdouskos/fauccal

Title: SB-GPLVM Toolbox

Brief description: A MATLAB toolbox for action recognition from Motion Capture sequences

based on Sequence Back-constrained Gaussian Process Latent Variable Models.

Title: Gaze Machine software modules

Brief description: A set of ROS nodes implemented in C++ and Python for the acquisition, processing and visualization of the image and inertial data collected by the Gaze Machine, including device calibration, visual localization and POR estimation.

Title: Synchronized Vicon/Stereo-camera data acquisition

Brief description: A set of ROS nodes and nodelets implemented in C++ to support synchronized acquisition of pose and image data from a ViconMX system and a stereo-camera.

Title: Motion primitive based motion planning for controlled UAVs

Brief description: A library for motion planning for controlled Unmanned Aerial Vehicles based on motion primitives, implemented in C++ using the OOPSMP library.

Part XII – Complete List of Publications (upd. July 2024)

Journal Articles

[j6] C. Premiero, B.D. Betz-Stablein, N. Ascott, B. D'Alessandro, S. Geborit, P. Fricker, A. Goldsteen, S. Gonzalez, K.J. Lee, S. Nazari, H. Nguyen, **V. Ntouskos**, F. Pahde, B. Pataki, J. Quintana, S. Puig, G. Rezze, R. Garcia, H.P. Soyer, J. Malvehy, 2024. A protocol for annotation of total body photography for machine learning to analyze skin phenotype and lesion classification, *Frontiers in Medicine*

IF 3.9

- [j5] **V. Ntouskos**, V. Tsironis, S. Spanos, C. Antoniou, A. Mallios, K. Karantzalos, 2024: Preliminary Results from the Submarine Gamma Imager, *Journal of Instrumentation*, 19 (3), C03012. ISSN: 1748-0221, DOI: 10.1088/1748-0221/19/03/C03012 IF 1.3
- [j4] **V. Ntouskos**, P. Mertikas, A. Mallios, K. Karantzalos, 2023: Seabed Classification from Multispectral Multibeam Data, *IEEE Journal of Oceanic Engineering*, 48 (3), pp. 874-887. ISSN: 0364-9059, DOI: 10.1109/JOE.2023.3267795
 IF 3.554
- [j3] B. Franchetti, **V. Ntouskos**, P. Giuliani, T. Heinman, L. Barnes, F. Pirri, 2019: Vision based modeling of plants phenotyping in vertical farming under artificial lighting, *Sensors* 19 (20), MDPI, p. 4378. ISSN: 1424-8220, DOI: 10.3390/s19204378
 IF 3.031
- [j2] M. Sanzari, V. Ntouskos, F. Pirri, 2019: Discovery and recognition of motion primitives in human activities, *PLOS One* 14(4): e0214499. ISSN: 1932-6203, DOI: 10.1371/journal.pone.0214499 IF 2.776

[j1] **V. Ntouskos**, F. Pirri, M. Pizzoli, A. Sinha, and B. Cafaro, 2013: Saliency prediction in the coherence theory of attention. *Biologically Inspired Cognitive Architectures*, **5**, 10-28. ISSN: 2212-683X, DOI: 10.1016/j.bica.2013.05.012

IF 0.838

Book Chapters

[b1] **V. Ntouskos**, P. Papadakis, and F. Pirri, 2014: Probabilistic Discriminative Dimensionality Reduction for Pose-Based Action Recognition. *Pattern Recognition Applications and Methods*, A. Fred, and M. De Marsico. Springer International Publishing, 137-152. ISSN: 1615-3871, DOI: 10.1007/978-3-319-12610-4 9

Conference Proceedings (peer-reviewed)

- [c27] S. Spanos, **V. Ntouskos**, K. Karantzalos, 2024: Multispectral Demosaicing with Deep Image Priors. *Int'l Geoscience and Remote Sensing Symposium*.
- [c26] S. Spanos, C. Antoniou, S. Vellas, V. Ntouskos, A. Mallios, P. Nomikou, K. Karantzalos, 2024: Autonomous Submarine Video System for Bubble Detection. *Int'l Geoscience and Remote Sensing Symposium*.
- [c25] A. Mallios, E. Coccolo, S. Yakovlev, D. Cabecinhas, L. Sebastião, P. Batista, A. Pascoal, E. Cunha, F. Branco, C. Antoniou, S. Vellas, P. Mertikas, V. Ntouskos, K. Karantzalos, I. Madesis, V. Lagaki, G. Siltzovalis, T.J. Mertzimekis, R. Camilli, 2024: Underwater glider custom payload for long-term radioactivity measurements. *Int'l Conference on Maritime Technology and Engineering*.
- [c24] T. Mertzimekis, V. Lagaki, I, Madesis, G. Siltzovalis, E. Petra, P. Nomikou, P. Batista, D. Cabecinhas, A. Pascoal, L. Sebastiao, J. Escartin, K. Kebkal, K. Karantzalos, **V. Douskos**, A. Mallios, K. Nikolopoulos, 2022. RAMONES and Environmental Intelligence: Progress Update. *ACM Conference on Information Technology for Social Good* (pp. 244-249). DOI: 10.1145/3524458.3547255
- [c23] D. Christopoulos, **V. Ntouskos**, K. Karantzalos, 2022: CloudTran: Cloud removal from multitemporal satellite images using axial transformer networks. *ISPRS Archives*. DOI: <u>10.5194/isprs-archives-XLIII-B2-2022-1125-2022</u>
- [c22] **V. Ntouskos**, C. Iliopolou, K. Karantzalos, 2021: Production Machine Learning Frameworks for Geospatial Big Data. *IEEE Int'l Conf. on Big Data (BigData)*, Online, DOI: 10.1109/BigData52589.2021.9671709
- [c21] E. Alati, L. Mauro, V. Ntouskos, F. Pirri, 2019: Help by Predicting what to Do. *IEEE Int'l Conf. on Image Processing (ICIP)*, Taipei, Taiwan. ISSN: 1522-4880, DOI: 10.1109/ICIP.2019.8803155
- [c20] E. Alati, L. Mauro, **V. Ntouskos**, F. Pirri, 2019: Anticipating next goal for robot plan prediction. *Intelligent Systems Conference (IntelliSys)*, London, UK. ISSN: 2194-5357, DOI: 10.1007/978-3-030-29516-5 60
- [c19] F. Pirri, L. Mauro, E. Alati, M. Sanzari, V. Ntouskos, G. Massimiani, 2019: Deep execution monitor for robot assistive tasks. *Proceedings of the European Conference on Computer Vision Workshops (ECCVW)*, Munich, Germany. ISSN: 0302-9743, DOI: 10.1007/978-3-030-11024-6 11

- [c18] F. Puja, S. Grazioso, L. Mauro, V. Ntouskos, M. Sanzari, L. Freda and F. Pirri, 2018: Visual search and recognition for robot task execution and monitoring. *Proceedings of Applications of Intelligent Systems (APPIS)*. ISSN: 0922-6389, DOI: 10.3233/978-1-61499-929-4-94
- [c17] I. Kruijff-Korbayová, L. Freda, M. Gianni, V. Ntouskos, V. Hlaváč, V. Kubelka, E. Zimmermann, H. Surmann, K. Dulic, W. Rottner, and E. Gissi, 2016: Deployment of ground and aerial robots in earthquake-struck Amatrice in Italy (brief report). *Proc. International Symposium on Safety, Security and Rescue Robotics (SSRR)*. Lausanne, Switzerland. DOI: 10.1109/SSRR.2016.7784314
- [c16] M. Sanzari, **V. Ntouskos**, and F. Pirri, 2016: Bayesian image-based 3D pose estimation. *Proc. European Conference on Computer Vision (ECCV)*. Amsterdam, Netherlands. ISSN: 0302-9743, DOI: 10.1007/978-3-319-46484-8 34
- [c15] M. Qodseya, M. Sanzari, V. Ntouskos, and F. Pirri, 2016: A3D: A device for studying gaze in 3D. *Proc. European Conference on Computer Vision Workshops (ECCVW)*. Amsterdam, Netherlands. ISSN: 0302-9743, DOI: 10.1007/978-3-319-46604-0 41
- [c14] F. Natola, V. Ntouskos, F. Pirri, and M. Sanzari, 2016: Single Image Object Modeling Based on BRDF and r-Surfaces Learning. *Proc. IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. Las Vegas, NV, IEEE, 4414-4423. ISSN: 1063-6919, DOI: 10.1109/CVPR.2016.478
- [c13] **V. Ntouskos**, M. Sanzari, B. Cafaro, F. Nardi, F. Natola, F. Pirri, and M. Ruiz 2015: Component-wise modeling of articulated objects. *Proc. IEEE International Conference on Computer Vision (ICCV)*. Santiago, Chile, IEEE, 2327-2335. ISSN: 1550-5499, DOI: 10.1109/ICCV.2015.268
- [c12] F. Natola, **V. Ntouskos**, M. Sanzari, and F. Pirri, 2015: Bayesian non-parametric inference for manifold based MoCap representation. *Proc. IEEE International Conference on Computer Vision (ICCV)*. Santiago, Chile, IEEE, 4606-4614. ISSN: 1550-5499, DOI: 10.1109/ICCV.2015.523
- [c11] B. Cafaro, I. Azimi, **V. Ntouskos**, F. Pirri, and M. Ruiz, 2015: Point Cloud Structural Parts Extraction based on Segmentation Energy Minimization. *Proc. 10th International Conference on Computer Graphics Theory and Applications (GRAPP 2015)*. Berlin, Germany, INSTICC, 150-157. ISBN: 9789897580871, DOI: 10.5220/0005309301500157
- [c10] M. Sanzari, F. Natola, F. Nardi, V. Ntouskos, M. Qodseya, and F. Pirri, 2015: Rigid tool affordance matching points of regard. *Proc. IROS 2015 Workshop "Learning object affordances: a fundamental step to allow prediction, planning and tool use?"*. Hamburg, Germany.
- [c9] F. Natola, **V. Ntouskos**, and F. Pirri, 2015: Collaborative Activities Understanding from 3D Data. *Proc. Doctoral Consortium on Pattern Recognition Applications and Methods*. Lisbon, Portugal, INSTICC, 19-23. (Best student paper award)
- [c8] G. De Giacomo, V. Ntouskos, F. Patrizi, S. Vassos, and D. Aversa, 2015: Service Composition with PDDL Representations and Visualization over Videogame Engines. *Proc. IEEE 8th International Conference on Service-Oriented Computing and Applications (SOCA 2015)*. Rome, Italy, IEEE. ISBN: 9781467394697, DOI: 10.1109/SOCA.2015.46
- [c7] G. De Giacomo, V. Ntouskos, F. Patrizi, S. Vassos, and D. Aversa, 2014: Agent Behavior Composition in Virtual Environments Realized Using Game Engines. *Proc. 2014 Workshop on AI Problems and Approaches for Intelligent Environments*. Prague, Czech Republic.

- [c6] **V. Ntouskos**, P. Papadakis, and F. Pirri, 2013: Discriminative sequence back-constrained GP-LVM for MOCAP based action recognition. *Proc. 2nd International Conference on Pattern Recognition Applications and Methods (ICPRAM)*. Barcelona, Spain, INSTICC, 87-96. ISBN: 9789898565419, DOI: 10.5220/0004268600870096
- [c5] E. Potapova, **V. Ntouskos**, A. Weiss, M. Zillich, M. Vincze, and F. Pirri, 2013: A Pilot Study on Eye-tracking in 3D Search Tasks. *Proc. 1st International Workshop on Solutions for Automatic Gaze Data Analysis (SAGA 2013)*. Bielefeld, Germany. DOI: 10.2390/biecoll-saga2013_1
- [c4] **V. Ntouskos**, P. Papadakis, and F. Pirri, 2012: A comprehensive analysis of human motion capture data for action recognition. *Proc. International Conference on Computer Vision Theory and Applications (VISAPP 2012)*. Rome, Italy, INSTICC, 647-652. ISBN: 9789898565037, DOI: 10.5220/0003868806470652
- [c3] **V. Douskos**, L. Grammatikopoulos, I. Kalisperakis, G. Karras, and E. Petsa, 2009: FAUCCAL: An open source toolbox for fully automatic camera calibration. *Proc. XXII CIPA Symposium on Digital Documentation, Interpretation & Presentation of Cultural Heritage.* Kyoto, Japan.
- [c2] **V. Douskos**, I. Kalisperakis, G. Karras, and E. Petsa, 2008: Fully automatic camera calibration using regular planar patterns. *ISPRS Archives*, **37**, 21-26. ISSN: 1682-1750.
- [c1] **V. Douskos**, I. Kalisperakis, and G. Karras, 2007: Automatic calibration of digital cameras using planar chess-board patterns. *Proc. 8th Conference on Optical 3-D Measurement Techniques*. Zurich, Switzerland, 9-12.

Scientific Abstracts

- [a4] A. Katsigera, P. Nomikou, K. Pavlopoulos, P. Polymenakou, K. Karantzalos, A. Mallios, S.S. Scire Scapuzzo, A.L. Rizzo, G. Lazaro, M. Longo, W. D'Alessandro, F. Grassa, L-E Heimburger-Boavida, V. Ntouskos, C. Antoniou, S. Spanos, 2024: Unveiling the Multifaceted Hazard Risks of Volcanic Eruptions: The case of Kolumbo submarine volcano, *EGU General Assembly 2024*, EGU24-648, DOI: 10.5194/egusphere-egu24-648
- [a3] S. Bressan, O. Gounari, **V. Ntouskos**, N. Corti, F. Bonali, K. Karantzalos, A. Tibaldi, 2022: A new free software to reconstruct stress trajectories: the Atmo-stress service. *EGU General Assembly* 2022, EGU22-7305, DOI: 10.5194/egusphere-egu22-7305
- [a2] K. Karantzalos, P. Nomikou, P. Wintersteller, J. Quintana, K. Baika, **V. Ntouskos**, D. Lampridou, J. Anbar, 2022: Novel Underwater Mapping Services through European Open Science Cloud. *EGU General Assembly*, EGU22-11661, DOI: 10.5194/egusphere-egu22-11661
- [a1] N. Corti, O. Gounari, V. Ntouskos, S. Bressan, F. Bonali, K. Karantzalos, A. Tibaldi, 2022: The Atmo-Stress service: a new web-designed software to reconstruct stress trajectories. *Nordic Geological Winter Meeting 2022 Programme and Abstracts* (pp.172-172)

Preprints

- [p3] F. Pirri, L. Mauro, E. Alati, V. Ntouskos, M. Izadpanahkakhk, E. Omrani, 2019: Anticipation and next action forecasting in video: an end-to-end model with memory. *Preprint, arXiv:* 1901.03728
- [p2] F. Puja, S. Grazioso, A. Tammaro, V. Ntouskos, M. Sanzari, and F. Pirri, 2017: Vision-based deep execution monitoring. *Preprint, arXiv: 1709.10507*

[p1] V. Ntouskos, and F. Pirri, 2016: Confidence Driven TGV Fusion. *Preprint, arXiv:1603.09302*

Theses

- **V. Ntouskos**, "Inverse Problem Theory in Shape and Action Modeling", Ph.D. Thesis, Departement of Computer, Control and Management Engineering "A. Ruberti", Sapienza University of Rome, 2016.
- **V. Ntouskos**, "MoCap based Action Recognition", M. Sc. Eng. Thesis, Departement of Computer, Control and Management Engineering "A. Ruberti", Sapienza University of Rome, 2012.
- **V. Ntouskos**, "A Randomized Approach for the Path planning of controlled UAVs", B. Eng. Thesis, Departement of Electronic Engineering, Sapienza University of Rome, 2009.
- **V. Ntouskos**, "Automatic calibration of digital cameras using regular planar patterns", Diploma Thesis, School of Rural and Surveying Engineerings, National Technical University of Athens, 2006.

(Best Diploma Thesis award at the National Technical University of Athens for the year 2006)

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Tutto quanto in esso dichiarato corrisponde a verità ai sensi degli articoli 46 e 47 del D.P.R. 445/2000.

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