KONSTANTINOS AMPLIANITIS, PhD

Deep Tech Entrepreneur
Computer Vision & Machine Learning Scientist

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Konstantinos Amplianitis
www.kostasamplianitis.com
www.volograms.com

EXPERTISE

Entrepreneurial Activity

Raising Startup Venture Capital
Proposals for EU Research Grants
Operations Management
Development of University spin-offs
Filing of Patents & Trademarks

AR/VR Technology

Virtual & Augmented Reality
Volumetric Video
3D Reconstructions
Video Object Segmentation
Machine & Deep Learning
Scientific Paper Reviewer in VR/AR

EDUCATION

PhD (Dr. rer. nat.) Computer Science
Research focus: Computer Vision & Deep Learning
Humboldt University of Berlin | 12/2012 – 03/2017

MSc Geodesy & Geoinformation Science
Disciplined orientation: Computer Vision
Technical University of Berlin | 10/2009 – 03/2012

BSc Geomatics & Geoinformatics Engr.
Disciplined orientation: Photogrammetry
Athens University of Applied Sciences | Greece
09/2005 – 09/2009

M.A. Classical Piano Performance (Soloist)
Nefeli Conservatory | Athens • Greece | 06/2008

B.A. Music Theory & Composition
Nefeli Conservatory | Athens • Greece | 06/2006

LANGUAGES

Greek | Native
English | Fluent
German | Intermediate

SPORTS • INTERESTS • HOBBIES

Swimming / 10K Road Runner / Paddle Tennis
Classical Piano Performance
Travel & Cultural trips
Building Jigsaw Puzzles

SUMMARY

4+ years international entrepreneurial experience in a university spin-off deep tech company, VOLOGRAMS for Augmented / Virtual Reality (AR / VR) applications, propelled to global commercialization, coupled with 7+ years' applied R&D and innovation in Computer Vision & Deep / Machine Learning. Experience in successfully raising €2.35m Startup Venture Capital, acquiring €320K+ in EU research grants, encountering operational & commercialization challenges. Published numerous Scientific research papers in top-tier international conferences & journals. Public speaker, Scientific Paper Reviewer and occasional opinion writer in related fields.

PROFESSIONAL EXPERIENCE

Co-founder, COO & BOD Member
VOLOGRAMS Ltd | Dublin – Ireland | 01/2018 – present
A Virtual & Augmented Reality Technology Company, startup and spin-off venture from Trinity College Dublin, with a mission to bring holograms of real humans to all consumers.

CHIEF OPERATIONS OFFICER | 09/2019 – present

- Involved in raising €1.5m seed capital from VC & Enterprise Ireland.
- Successfully raised €326K through national & EU research grants
- Developed the Company's Intellectual Property (IP) strategy
- Filed 2 patents and trademark rights for Europe and USA
- Successfully recruited, primarily international employees, with a view to strengthen diversity for innovation, enhance the company's global presence and culture. Developed a clear on-boarding process

CHIEF SCIENTIFIC OFFICER | 05/2018 – 08/2019

- Involved in raising €850k pre-seed capital from VC & Enterprise Ireland
- Restructured Volograms' backend API and set up programming standards & procedures

Postdoctoral Research Fellow
TRINITY COLLEGE DUBLIN | Ireland | 09/2016 – 05/2018
Graphics Vision & Visualization Group
Member of the research project "V-SENSE "Extending visual Sensation through Image-based Visual Computing", led by Prof. Aljosa Smolic. Responsible for R&D of natural image matting & 3D reconstruction for volumetric video.

- Successfully published scientific papers in top tier conferences / journals on AR/VR technologies
- Involved in the development of a mature 3D prototype system, used in several application examples and creative experiments
- Involved in the creation of a patent – method & device for creating a 3D model

Software Engineer
SIEMENS AG | Berlin • Germany | 03/2015 – 06/2016
Mobility Division, Technology & Innovation

Responsible for the development of 3D Object recognition algorithms for Augmented Reality Products to be used for robustly detecting & recognizing a variety of objects in a Siemens Vectron Locomotive, from cameras embedded in different devices, such as tablets and mobile phones.

Research Associate
HUMBOLDT INNOVATION GmbH | Berlin • Germany | 12/2015 – 06/2016
Computer Vision Group

Responsible for correcting systematic errors of a static camera through bundle adjustment

Research Associate
HUMBOLDT UNIVERSITY OF BERLIN | Germany | 07/2012 – 06/2016
Computer Vision Group

Involved in R&D, as well as critical projects in the field of Computer Vision & Machine Learning, leading towards a PhD.

RESEARCH GRANTS

- VOLOGRAMS @ **Innovative Volumetric Capture & Editing Tools for Ubiquitous Storytelling** (INVICTUS PROJECT). EU grant 280K, HORIZON 2020: ICT-55 2018-2020 Interactive Technologies 2020 – 2022
- Tesla XP GPU card NVIDIA Corporation | 2017

ACADEMIC SERVICES

- Reviewer (Journals)
  - Computer Graphics Forum | 2020
  - IEEE Transactions on Multimedia | 2019
  - IEEE Image Understanding | 2017
  - EURASIP Image & Video Processing | 2017
  - ISPRS Photogrammetry & Remote Sensing | 2016
- Reviewer (Conferences)
  - European Signal Processing Conference | 2018
  - International Society for Photogrammetry & Remote Sensing | 2016
  - International Conference on Computer Vision Theory and Applications | 2016
- Session Chair
  - International Conference on Computer Vision Theory and Applications | Rome | 27-29 / 02 / 2016
  - International Conference on Computer Vision Theory and Applications | Berlin | 11-14 / 03 / 2015

TEACHING EXPERIENCE

- Trinity College Dublin
  - Computer Vision (Module CSGV1/ACAD) 2016-2017
  - AR (Module CS7034/ACAD) 2016-2017
  - Comp. Vision (Module CS4053/ACAD) 2016-2017
  - Vision Systems (Module CS7008/ACAD) 2016-2017
  - Comp. Graphics (Module CS4052/ACAD) 2016-2017
- Humboldt University of Berlin
  - Stereo Vision Module 32313 - ACAD Winter terms 2012 - 2016

PROGRAMMING COMPETENCES

- Operating Systems .....Unix / Windows
- Programming Languages .....C / C++ / Python
- Script Languages .....MATLAB
- C++ Libraries ..... Boost / OpenMP
- OPT / Math Framework .....Ceres / Eigen / FADBAD
- CV Frameworks ..... OpenCV / MVS / MVG / PCL
- AR Frameworks .....MetaioSDK
- Revision Control Systems ..... Git / SVN
- Build Systems ..... CMake
- Unit Testing .....Google Tests
- Typesetting ..... LaTeX

TRAINING & CERTIFICATIONS

- Overview and an in-depth analysis of the state-of-the art research in Computer Vision. **International Computer Vision Summer School** | Sicily | 09-15 / 0 7 / 2017
- Security City: Bringing Information Security to Life **Siemens AG, License: Z001NVMP** | Berlin | 05/2015
- Drones applied to Cultural Heritage & Archaeology **International Summer School** | Pontignano (Siena) 20-26 / 09 / 2013

HONORS / AWARDS / MENTIONS

- VOLOGRAMS “Top Virtual Reality Companies in Ireland (2021)” WELP MAGAZINE | 02/2021
- VOLOGRAMS “Top 100 Hot Startups to watch”. **The Sunday Business Post Ireland** | 2018 / 2019 Best Journal Paper Award
- **Journal of Visual Comm. & Image Representation** 06/2019. Affordable Content Creation for Free-Viewpoint Video and VR/AR Applications
- Campus Company Recognition Award **Trinity College Dublin Innovation Awards** | 12/2018 VOLOGRAMS acknowledged by TCD for its innovative research & entrepreneurship.
- 1st Prize NEM Art & Design Competition **Art & Design Competition NEM Summit** | Madrid | 11/2017 “Virtual Play: After Samuel Beckett” V-Sense Trinity College
- 1st Prize Reading Group Competition **Inspiring Computer Vision System Solutions** | Italy 07/2017. Grounded on the seminar / workshop 3D scanning work “The Digital Michelangelo Project”
- Distinction in Piano Performance **Hellenic Ministry of Culture** | 06/2008
- Distinction in Music Theory & Composition **Hellenic Ministry of Culture** | 06/2006
- Piano Performance Scholarship **NEFELI Conservatory** | Athens • Greece | 2003/2004

VOLUNTEER WORK

- CAREER MENTOR
  The Tipping Point in Education
  Empower youth to connect with industry role models (mentors) to take their once-in-a-life time decision for their career
- BUSINESS MEMBER & ADVISOR
  The Hellenic Community of Ireland

AFFILIATIONS

- EC initiative for Extended Reality (**XR4ALL**)
- Institute of Electrical & Electronics Engineers (**IEEE**)
- The British Machine Vision Association (**BMVA**)
- Association for Computing Machinery (**ACM**)
- The Computer Vision Foundation (**CVF**)
- International Society for Photogrammetry & Remote Sensing (**ISPRS**)
- Greek Startup Universe (**GSU**)

Publications

Citations **199** • h-index **5** • i10-index **3**

No.	Title	Cited by	Year
1.	**Method and apparatus for generating a three-dimensional model** A Smolic, R Pages, J Ondrej, K Amplianitis, D Monaghan US Patent App. 16/955,564	2	2022
2.	**Vologrames & V-SENSE Volumetric Video Dataset** R Pagés, K Amplianitis, J Ondrej, E Zerman, A Smolic ISO/IEC JTC1/SC29/WG07 MPEG2021/m56767	2	2021
3.	**Forge: A volumetric video processing platform for everyone** Rafael Pagés, Jan Ondřej, Konstantinos Amplianitis, Nicolás Moreno de Palma, Aljosa Smolic NEM SUMMIT 2020, June 30 – July 2, Dublin, Ireland		2020
4.	**Jonathan Swift: Augmented Reality Application for Trinity Library's Long Room** N O'Dwyer, J Ondřej, R Pagés, K Amplianitis, A Smolić International Conference on Interactive Digital Storytelling, 348-351	5	2018
5.	**Beckett in VR: Exploring narrative using free viewpoint video** Néill O'Dwyer, Nicholas Johnson, Rafael Pagés, Jan Ondřej, Konstantinos Amplianitis, Enda Bates, David Monaghan, Aljoša Smolić ACM SIGGRAPH 2018 Posters, 1-2	7	2018
6.	**AlphaGAN: Generative adversarial networks for natural image matting** S Lutz, K Amplianitis, A Smolic arXiv preprint arXiv:1807.10088	113	2018
7.	**Affordable content creation for free-viewpoint video and VR/AR applications** R Pagés, K Amplianitis, D Monaghan, J Ondřej, A Smolić Journal of Visual Communication and Image Representation 53, 192-201	41	2018
8.	**Samuel Beckett in Virtual Reality: Exploring narrative using free viewpoint video** Néill O' Dwyer, Nicholas Johnson, Enda Bates, Rafael Pagés, Konstantinos Amplianitis, David Monaghan, Aljoša Smolic Leonardo Journal (ISAST), 10	5	2018
9.	**Virtual play in free-viewpoint video: Reinterpreting Samuel Beckett for virtual reality** Néill O'Dwyer, Nicholas Johnson, Enda Bates, Rafael Pagés, Jan Ondřej, Konstantinos Amplianitis, David Monaghan, Aljoša Smolić 2017 IEEE International Symposium on Mixed and Augmented Reality (ISMAR-Adjunct)	15	2017
10.	**Inspiring Computer Vision System Solutions** Julian Zilly, Amit Boyarski, Micael Carvalho, Amir Atapour Abarghouei, Konstantinos Amplianitis, Aleksandr Krasnov, Massimiliano Mancini, Hernán Gonzalez, Riccardo Spezialetti, Carlos Sampedro Pérez, Hao Liar Xiv preprint arXiv:1707.07210, 2017		2017
11.	**Leave a Trace - A People Tracking System Meets Anomaly Detection** D Rueß, K Amplianitis, N Deckers, M Adduci, K Manthey, R Reulke The International Journal of Multimedia & Its Applications (IJMA) 9, 13		2017
12.	**Human Recognition in RGBD combining Object Detectors and Conditional Random Fields** K Amplianitis, R Hänsch, R Reulke International Conference on Computer Vision Theory and Applications (VISAPP)	1	2016
13.	**Towards a 3D Pipeline for Monitoring and Tracking People in an Indoor Scenario using Multiple RGBD Sensors.** K Amplianitis, M Adduci, R Reulke International Conference on Computer Vision Theory and Applications (VISAPP)	1	2015
14.	**A Quality Evaluation of Single and Multiple Camera Calibration Approaches for an Indoor Multi Camera Tracking System.** M Adduci, K Amplianitis, R Reulke International Archives of the Photogrammetry, Remote Sensing & Spatial Information Sciences	1	2014
15.	**Calibration of a multiple stereo and RGB-D camera system for 3D human tracking** K Amplianitis, M Adduci, R Reulke ISPRS - International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, Volume XL-3/W1, 2014 EuroCOW 2014, the European Calibration and Orientation Workshop, 12-14 February 2014, Castelldefels, Spain	6	2014
16.	**3D Object Detection and Tracking in an Indoor Environment** K Amplianitis, M Adduci, R Reulke Anwendungsbezogener Workshop zur Erfassung, Modellierung, Verarbeitung und Auswertung von 3D-Daten		2014
17.	**3D Personenerkennung und Verfolgung mit Stereo-und RGB-D Kameras** M Adduci, K Amplianitis, S Bodas, M Misgaiski-Haß, R Reulke Humboldt-Universität zu Berlin, Institut für Informatik, Computer Vision		2014