PERSONAL INFORMATION

Alessandro Cantelli-Forti

POSITION Researcher in Cybersecurity and Digital Forensics

WORK EXPERIENCE

February, 2012 - to present

Researcher

National Inter-University Consortium for Telecommunications, Radar and Surveillance Systems National Lab (CNIT-RaSS)

Since 2012 is a researcher at the 'Radar and Surveillance Systems' (RaSS) National Laboratory of Pisa. My main research topics are cybersecurity, digital forensic, incident management, and remediation.

Since 2012 I was been involved as a researcher in several projects funded by Italian ministries (e.g.: MoD, Ministry of Economic Development) and European organizations (e.g.: EU Commission, EDA, ESA) such as SMARP, HABITAT, ISAR SKY, X-WALD, and SCOUT. I led the commissioning of the cyber component of the SCOUT project. The community research and development information service (CORDIS-EU) has selected SCOUT as a promising and impactful EU-funded project.

Since 2014, I have been involved in securing funding for scientific research, leading the writing of more than 30 project proposals and successfully acquiring 7 of them.

In 2018, I actively participated in the research activities of the NATO AFSC Small Scale Study Project IV on "Information Assurance" (AFSC SSS-IA), for which my working group received a letter of appreciation signed by NATO Chief Scientist Dr. Thomas H. Killion.

In the biennium 2020-2023, I served as the principal investigator for the Cyber Resilience implementation of two projects funded by the Italian Ministry of Defense, namely SMART-AESA and ISS (Integrated Submarine System), respectively coordinated by Leonardo S.p.A. and by DRASS S.r.l. The SMART-AESA project focused on cyber risk management in radar systems for hypersonic threats, while the ISS project dealt with Cyber Resilience throughout the entire IT chain in the military underwater environment.

In the framework of the academic third mission, emphasizing technology transfer, I have been appointed as an expert by Courts and Public Prosecutors. In particular, I have been selected as a digital evidence expert in several criminal cases, including the ship accidents of Costa Concordia, Norman Atlantic, Efe Murat, Msc Opera, and Costa Deliziosa. Additionally, I was involved in the investigation of the high-speed train accident that occurred in Parma in November 2021, the "Diesel-Gate" scandal involving Audi-Porsche, and the Mottarone cableway tragedy.

The Costa Concordia case investigation lasted four years and was conducted under the direct coordination of Admiral Cavo Dragone, Commander of the Joint Operations Headquarters. The research activities and international collaborations associated with these projects have resulted in the publication of scientific papers and technical reports.

March, 2024 - September 2026

NATO Project Director

Scientific and technical coordination of the *Ai4CUAV – Innovative AI-framework to enable the Detection, Classification and Tracking of Killer-Drones"* project of the NATO Science for Peace and Security Programme, NATO Partnerships and Cooperative Security Committee. Grant number: G6246 of 22 November 2023. Total budget: 350,000 €

June, 2019 - September, 2022 **NATO Project Director**

Scientific and technical coordination of the *Anti-Drones – Innovative concept to detect, recognize and track "killer-drones"* project of the NATO Science for Peace and Security Programme, Emerging Security Challenges Division. Grant number: G5633 of 12 June, 2019. Total budget: 398,014€

June 2023 - to present **European Defence Agency Governmental expert**

Governmental expert of Cyber Defence Capability Technology Area (CapTech)

September, 2020 - June 2023 **European Defence Agency non-governmental expert**

Non-governmental expert of Cyber Defence Capability Technology Area (CapTech)

July, 2015 – to present **Co-founder of ECHOES s.r.l**

Co-founder of *ECHOES*, a CNIT spin-off company developing on radar systems

October, 2021 - November 2023 **Lecturer**

Universita' degli Studi di Genova

Digital Forensics Advanced Training Course held at *Joint Telecommunications School, Stelmilit* in Chiavari (GE), a.y. 2021, 2022, 2023

Network Forensics Advanced Training Course held at *Joint Telecommunications School, Stelmilit* in Chiavari (GE), a.y. 2022, 2023

November, 2020 **Fixed Term Professor**

Universita' degli Studi di Modena e Reggio Emilia

Management of the Incident Management and Remediation process, 1st-level Master in Cyber Defence Governance held at *Joint Telecommunications School, Stelmilit* in Chiavari (GE), a.y. 2020/2021

May, 2019 **Lecturer**

Universita' degli Studi di Modena e Reggio Emilia

Forensic Engineering: case study Cyberacademy Advanced Training Course in Cyber Security, a.y. 2018/2019

March - May, 2014 **Fixed Term Professor**

Universita' degli Studi di Napoli «Parthenope»

Network Security 2nd-level Master, a.y. 2013/2014

March - May, 2013 **Fixed Term Professor**

Universita' degli Studi di Napoli «Federico II»

Network Security 2nd-level Master, a.y. 2012/2013

November 2017 – October, 2018 **Internship**

WebLab Laboratory, Department of Engineering «Enzo Ferrari», Università degli Studi di Modena e Reggio Emilia, Modena

As part of the PhD scholarship

April 2016 – July, 2017   Guest Lecturer in Digital Forensics applied to industrial accidents

Guest lecturer for EMAIIF (Marine Accident Investigators' International Forum), MAIB (Marine Accident Investigation Branch, United Kingdom), and DIGIFEMA (Direzione Generale per le Investigazioni Ferroviarie e Marittime, Italy) about naval safety and information security at University of Cranfield (UK) and at Southampton UK Ministry Offices.

EDUCATION AND TRAINING

October 2015 - April, 29 2019   Ph.D. Program in Information Engineering of the Engineering Ph.D. School "Leonardo da Vinci" of the University of Pisa

Final grade: excellent

Università degli studi di Pisa – Pisa

Ph.D. Thesis   Developing innovative cybersecurity tecniques for protection of critical infrastructure

September, 2013   Summer School on Computer Security & Privacy, Department of Electrical and Electrinic Engineering

Università degli studi di Cagliari – Cagliari

Final Examination   Building trust in the Information Age

July, 15 2011   Bachelor's and Master's degree in Computer Science Engineering

Università degli studi di Genova – Genoa

Master's Thesis   Studio ed analisi di un data-link tra sottosistemi di un radar HF-OTH di tipo skywave

August, 2001   ELP Program, Academic Plus

UCSD, University of California, San Diego

Academic Program Plus   English Language Program

RELEVANT PUBLICATIONS

A. Cantelli-Forti, M. Colajanni, S. Russo, "Penetrating the Silence: Data Exfiltration in Maritime and Underwater Scenarios", 2023 IEEE 48th Conference on Local Computer Networks (LCN), pp. 1–6, 2023, IEEE, DOI: 10.1109/LCN58197.2023.10223402

G. Meucci, B. Karahoda, A. Oveis, F. Mancuso, E. Jajaga, A. Cantelli-Forti, "Naval Cybersecurity in the Age of AI: deceptive ISAR Images Generation with GANs", 2023 IEEE 48th Conference on Local Computer Networks (LCN), pp. 1–6, 2023, IEEE, DOI: 10.1109/LCN58197.2023.10223338

A. Lupidi, A. Cantelli-Forti, E. Jajaga, W. Matta, "An artificial intelligence application for a network of LPI-FMCW mini-radar to recognize killer-drones", In Proceedings of the 18th International Conference on Web Information Systems and Technologies - WEBIST, Vol. 18, pp. 320–326, 2022, DOI: 10.5220/0011590300003318

V. Semenyuk, I. Kurmashev, A. Lupidi, A. Cantelli-Forti, "Developing the GoogleNet neural network for the detection and recognition of unmanned aerial vehicles in the data Fusion System", Eastern-European Journal of Enterprise Technologies, Vol. 2, No. 9 (122), pp. 16–25, 2023, PC TECHNOLOGY CENTER, Kharkiv Ucraine

E. Jajaga, V. Rushiti, B. Ramadani, D. Pavleski, A. Cantelli-Forti, B. Stojkoska, O. Petrovska, "An Image-based Classification Module for Building a Data Fusion Anti-drone System", 2022, Springer, Cham

A. Cantelli-Forti, M. Colajanni, "Digital Forensics in Vessel Transportation Systems", Lecture Notes in Computer Science LNCS, Springer, DOI: 10.1007/978-3-030-45371-8_23

A. Cantelli-Forti, A. Capria et al., "SCOUT Multitech SeCurity system for intercOnnected space control groUnd staTions: System Architecture and Experimental Results", submitted to: International Journal of Critical Infrastructure Protection (IJCIP), Elsevier, DOI: 10.1016/j.ijcip.2020.100407

L. Fiorentini, L. Marmo and A. Cantelli-Forti, "Fire on board of a ferryboat", Book chapter in Principles of Forensic Engineering Applied to Industrial Accidents, pp. 280-296, ISBN: 978-1-118-96280-0, Wiley, Dec 2018

Cantelli-Forti, "Forensic Analysis of Industrial Critical Systems: The Costa Concordia's Voyage Data Recorder Case", Proc. of 2018 IEEE International Conference on Smart Computing (SMARTCOMP), pp. 458-463, June 2018, DOI: 10.1109/SMARTCOMP.2018.00046

A. Cantelli-Forti, M. Colajanni, "Adversarial Fingerprinting of Cyber Attacks based on Stateful Honeypots", Proceedings of the 2018 International Conference on Computational Science and Computational Intelligence, Las Vegas USA, DOI: 10.1109/CSCI46756.2018.00012

W. Matta, A. Cantelli-Forti, "An innovative Airport Physical-cyber Security System (APSS)", Information & Security: An International Journal, 2018, DOI: DOI: 10.11610/isij.4321

Callegari, C.; Cantelli Forti, A.; D'Amore, G.; de la Hoz, E.; Santamaria, D.; García-Ferreira, I. and López-Civera, G. (2016). "An Architecture for Securing Communications in Critical Infrastructure", In Proceedings of the 13th International Joint Conference on e-Business and Telecommunications - DOI: 10.5220/0006016801110120

Capria A., Moscardini C., Conti M., Cantelli Forti A., Berizzi F. and al, "Passive radar research activity at Lab RaSS-CNIT", presented to IEEE South Australia Workshop on Passive Radar, Adelaide, Australia, 23-24 November, 2015.

A. Capria, D. Petri, C. Moscardini, M. Conti, A. Cantelli-Forti et al., "Software-defined Multi-band Array Passive Radar (SMARP) demonstrator: A test and evaluation perspective", Proc. of OCEANS 2015, pp. 1-6, Genoa, 2015, 18-21 May 2015

B. Chiaia, R. Sicari, A.Cantelli-Forti et al., "Incendio della Motonave Norman Attlantic: Indagini Multidisciplinari in Incidente Probatorio", IF CRASC Conference on Forensic Engineering, Politecnico di Milano, 14-16 Settembre 2017

A. Cantelli-Fori, "Tactical Digital Forensics per Infrastructure Critiche", Book Chapter, Legal Tech Forum Report 2021, EAN:9788828837633

T. Grotto, E. Casadio, A. Cantelli-Forti, "Tecnologie per le investigazioni digitali ed Informatica Forense", in Legal teck, Contract re-design & Big data per professionisti e imprese, Vol. 1, Capitolo 1, 2022, IPSOA

Driving licence	AB (Italy)