Lorenzo Dinia, PhD

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EDUCATION

Sapienza University, Rome, Italy
PhD in Mathematical Models, Electromagnetism and Nano-Science **Feb 2019**
Thesis - Optical Sensors for Cultural Heritage and Biomedical Applications
NYU Polytechnic School of Engineering, Brooklyn, NY
Master of Science, Industrial Engineering, GPA: **3.96/4.00** **Aug 2014**
Sapienza University, Rome, Italy
Master of Science, Biomedical Engineering, GPA: **4.00/4.00** **Nov 2009**
Bachelor of Science in Clinical Engineering, GPA: **3.85/4.00** **May 2006**

LANGUAGE: • Italian • English

PUBLICATIONS AND AWARDS

- M. Tannino, F. Mangini, L. Dinia, et al. "A heuristic model to evaluate the dielectric properties of human tissues at microwave band based on water and solid content," Journal of Engineering and Applied Science, 70, 43, 2023.
- L. Dinia, V.A. Iannitti, F. Mangini, F. Di Lascio, F. Frezza, "Understanding the Spread of COVID-19 Based on Economic and Socio-Political Factors," *Sustainability* 2022, *14*, 1768.
- L. Dinia, F. Mangini, F. Frezza, "Electromagnetic scattering between an elliptically inhomogeneous plane wave and a multilayered cylinder," Journal of Telecommunications and Information Technology, pp. 1-12, 2020.
- S. Batool, L. Dinia, F. Frezza, F. Mangini, and M. Nisar, "Elliptically inhomogeneous plane wave impinging on an infinite number of parallel cylinders," 2020 33rd URSI General Assembly and Scientific Symposium, URSI GASS 2020.
- S. Batool, L. Dinia, F. Frezza, F. Mangini, and M. Nisar, "Electromagnetic interaction with a monodispersed system in sedimentation equilibrium," 2020 33rd URSI General Assembly and Scientific Symposium, URSI GASS 2020.
- F. Barbuto, P. P. Di Gregorio, L. Dinia, F. Frezza, F. Mangini, F. Ponti, M. Troiano, and P. Simeoni, "Machine Learning for analysis of GPR images and electromagnetic diagnostics," 2020 33rd URSI General Assembly and Scientific Symposium, URSI GASS 2020.
- L. Dinia and F. Frezza, "Laser Beam Self-Focusing in Optical Fiber Controlled Through FBG Integration," Conference: 2020 IEEE International Workshop on Metrology for Industry 4.0 & IoT (MetroInd4.0&IoT), at Rome, 2020.
- L. Dinia, F. Mangini, I. Mileti, E. Palermo, and F. Frezza, "Adverse Patient Events in Anesthesia Delivery - Review and Analysis of Potentially Avoidable Events," in IEEE International Symposium on Medical Measurements and Applications (MeMeA), at Bari, Italy, 2020.
- I. Conforti, S. Fiore, I. Mileti, L. Dinia, F. Mangini, F. Frezza, Z. Del Prete, and E. Palermo "Measuring immediate effects of patellar taping on balance kinematics," in IEEE International Symposium on Medical Measurements and Applications (MeMeA), at Bari, Italy, 2020.
- L. Dinia, F. Mangini, and F. Frezza "Electromagnetic scattering of an inhomogeneous plane wave by an ensemble of cylinders," Journal of Telecommunications and Information Technology, 2020.
- F. Mangini, L. Dinia, and F. Frezza, "Electromagnetic scattering by a cylinder in a lossy medium of an inhomogeneous elliptically polarized plane wave," Journal of Telecommunications and Information Technology, 4, 2019.
- Fabio Mangini, Lorenzo Dinia, Mauro Del Muto, Enrico Federici, Laura Rivaroli, and Fabrizio Frezza, "Study of optical tag profile of the Tag Recognition Measurement System in cultural Heritage", Journal of Cultural Heritage, 2020.
- Fabio Mangini, Livio D'Alvia, Mauro Del Muto, Lorenzo Dinia, Enrico Federici, Eduardo Palermo, Zaccaria Del Prete, and Fabrizio Frezza, "Tag recognition: A new methodology for the structural monitoring of cultural heritage," Measurement, 127, pp. 308-313, 2018.
- Lorenzo Dinia, Fabio Mangini, Marco Muzi, and Fabrizio Frezza, "FBG Multifunctional pH Sensor - Monitoring the pH Rain in Cultural Heritage," Acta Imeko, 7(3), pp. 24-30, 2018, ISSN: 2221-870X.
- Lorenzo Dinia, Fabio Mangini, Maria Alessandra Marella, and Fabrizio Frezza, "Parallelism between Risk and Perception of Risk among Caregivers during Anesthesia Delivery," European Review for Medical and Pharmacological Sciences, 23 (7), pp. 3129-3141, 2019.
- L. Dinia, F. Mangini, M. Muzi, F. Frezza, "Fiber Bragg grating multifunctional pH sensor for monitoring the rain in cultural heritage," in IMEKO International Conference on Metrology for Archaeology and Cultural Heritage, at Lecce, Italy, 2017, pp. 213-216, ISBN: 978-1-5108-5818-3.
- F. Mangini, Lorenzo Dinia, F. Frezza, A. Beccarini, M. Del Muto, E. Federici, S. Godi, and A. Segneri, "New crack measurement methodology: Tag Recognition," in IMEKO International Conference on Metrology for Archaeology and Cultural Heritage, at Lecce, Italy, 2017.
- L. Dinia, F. Mangini, and F. Frezza, "Can the Perception of Risk Be Decreased among Caregivers during Anesthesia Delivery?," in IEEE International Symposium on Medical Measurements and Applications (MeMeA), at Rome, Italy, 2018.
- Lorenzo Dinia, Fabio Mangini, "FBG Multifunctional pH Sensor - Monitoring the pH Rain in Cultural Heritage," Marabelli prizewinner – Youth and Scientific Innovation, National Etruscan Museum of Villa Giulia (Rome), October 24th, 2018.

PROFESSIONAL EXPERIENCE

MINDRAY DS USA, Inc., Mahwah, NJ
Quality Engineer III & Calibration Supervisor   **May 2023 – Present**
Quality Engineer II   **Nov 2016 – Apr 2023**
- Manage the verification process of newly developed in-house software for complaint handling, non-conforming material, and document control
- Manage the calibration activities with a process improvement approach to reduce human errors and increase productivity
- Conduct root cause analysis of failing devices and parts within 3 days of the Become Aware Date, and document results and compile reports
- Assess the integrity and completeness of all complaint files generated yearly related to patient monitoring and anesthesia devices with 80% of the complaints closed within 30 days. Document results and compile complaint records to satisfy Regulatory needs
- Manage product impact studies on devices found out of tolerance during calibration completing product impact investigation within 5 days of release
- Generate quality metrics and reports as required to support department objectives
- Work with the R&D team to incorporate design changes driven by safety and compliance needs
- Participate in cross-functional project team meetings to evaluate design documentation for quality characteristics, safety risk management, manufacturing activities, and service related issues
- Review complaints data for traceability, cohesion, and risks
- Train and lead new engineers on root cause analysis and other aspects of the quality management system
- Collaborate with Regulatory department to perform FDA, MDSAP, and internal audits
- Performed a research study on the perception of risk in anesthesia delivery and how is usually magnified by the hospital personnel

PRO PACK Inc., Wyckoff, NJ   **Nov 2015 – Oct 2016**
Chief Field Service Engineer
- Managed quality control checks to ensure safety, effectiveness, and reliability of 30+ systems
- Handled mechanical and electrical troubleshooting, analysis of service issues and implementation of needed solutions
- Supervised and performed installation and testing of packaging equipment resulting in a 30% decrease in installation times
- Trained internal and external personnel and customers on the use and maintenance of the packaging machines
- Managed all on-site installation, repair, maintenance and test activities
- Developed a preventive and corrective action program
- Implemented an inventory system to keep track of service orders and purchase and use of spare parts
- Improved reliability of machines

BROOKLYNPHONO, Brooklyn, NY   **Jan 2015 – Oct 2015**
Technical and Process Engineer
- Collected and analyzed data; increased production throughput by 35% through bottleneck analysis
- Set preventive and corrective action protocols and worked on maintenance of machines; increased availability by 15%
- Upgraded the production floor layout to optimize material flow

TECNOLOGIE SANITARIE SPA, Rome, Italy   **Oct 2011 – May 2013**
Maintenance Manager/Clinical Engineer
- Head of Clinical Engineering Committee of $5.1M contract at George Eastman Hospital and Sandro Pertini Hospital
- Managed the maintenance of 8000+ electromechanical medical devices; saved 17% on corrective action expenses
- Supervisor of 11 technicians and 3 administrative employees; improved maintenance rating by 29%; implemented innovative preventive activities, quality control systems, electrical safety checks, and acceptance tests for medical devices

AUSL RM/A, Rome, Italy   **Nov 2010 – Sept 2011**
Clinical and Biotech Engineer Fellow
- Broadened technical knowledge in medical devices, x-ray equipment, and heart monitoring devices
- Interacted with hospital personnel to solve technical issues
- Managed a renewal plan for all ultrasound machines based on multiple factors

ACADEMIC PROJECTS

NYU Polytechnic School of Engineering and Mount Sinai Hospital   **Feb 2014 – May 2014**
AUTOMATING LAB PROCESSES USING RASPBERRY PI
- Developed prototype of micro-processing automatic system for high-precision liquid dispensing at Oncological Department

NYU Polytechnic School of Engineering   **Sept 2014 – May 2014**
- Production Science; achieved double capacity by identifying and eliminating bottlenecks and improving electronic component production line

- Quality Control and Improvement; evaluated and confirmed reliability, efficiency, and accuracy of the MTA schedule based on studying the R train inter-arrival time at Atlantic-Barclays Center

Sapienza University and Children's Hospital IRCCS of Rome   **Feb 2009 – Nov 2009**

METROLOGY VERIFICATION OF OPTICAL SYSTEMS FOR MOVEMENT ANALYSIS
- Defined a measurement protocol for quantifying the systematic error (order of magnitude 2-3mm) of Vicon optical system by utilizing FaroArm measuring instrument, Visual Basic, and Matlab

Sapienza University and Umberto I Hospital of Rome   **Jan 2006 – May 2006**

SEMI-AUTOMATIC EXTERNAL DEFIBRILLATOR
- Studied the impact of semi-automatic external defibrillators in medical emergencies and recommended their use

TECHNICAL SKILLS

Programming Languages and Software: C++, Visual basic, Mupad, Matlab, Python, SolidWorks, Witness, Coswin, SPSS, DL260 PLC, Comsol, ExtraView, Salesforce, SAP, GageManager

Industrial Competences: Quality Control, Six Sigma, Medical Devices, MDR, CAPA, Root Cause Analysis, 21 CFR Part 11/803/806/820, ISO 13485, Process Improvement, GMP, Regression Analysis, DOE, ANOVA, Control Chart, Safety

CERTIFICATIONS

- IBM Data Science Professional Certificate (July 2024)
- ISO 13485:2016 Certified Internal Auditor Training (July 2024)
    - MD – Medical Device Management (TPECS, Certificate N. MD3546)
    - AU – Auditing Management System (TPECS, Certificate N. AU10471)
- Italian Professional Engineer Certificate
- Workplace Safety training for RSPP (Prevention and Protection Service Manager)
- Low-Voltage Electric Systems Certificate
- Economic Design of Photovoltaic Systems Certificate
- Electric safety checks certification for medical devices