

# PIETRO MASCAGNI, MD, PhD



## EDUCATION

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November 2021 – present

**Resident in General Surgery, Catholic University of Sacred Heart, Rome, Italy**

November 2018 – April 2022

**PhD, Catholic University of Sacred Heart, Rome, Italy**

- “Surgical Data Science for safe laparoscopic cholecystectomy”, co-supervised by Prof. Guido Costamagna (Catholic University of Sacred Heart, Rome, Italy) and Prof. Nicolas Padoy (University of Strasbourg, France)
- Visiting researcher at CAMMA, ICube, University of Strasbourg, France

September 2018 – July 2019

**Surgical Endoscopy University Diploma (Master), IHU-Strasbourg, France**

December 2017 – October 2018

**Research Fellow in Minimally Invasive Surgery and Surgical Innovation, IRCAD/IHU-Strasbourg, France**

2017-2018

**II level Master in Coloproctology, Sapienza University of Rome, Italy**

February 2017

**I level Master, Italian Society of Hernia and Abdominal Wall Surgery (ISHAWS)**

2010-2016

**Bachelor of Medicine, Bachelor of Surgery (MBBS), Sapienza University of Rome, Italy**

- Graduated scoring 110/110 Cum Laude, average score of 29.64/30
- Selected for “Percorso di Eccellenza”, an honor class focusing on translational research
- Received 5 scholarships for academic merits
- 6 months Erasmus program (Hospital Clínic, Universitat de Barcelona, Spain); 2 months Erasmus+ Traineeship (Chirurgie Digestive, Hôpitaux Universitaires de Strasbourg, France) and 1 month-long Clerkships in Plastic Surgery (Soochow, China), General Surgery (Chihuahua, Mexico) and Cardiovascular Surgery (Kazan, Russia)

## **PROFESSIONAL EXPERIENCE**

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November 2021 - Present

**Clinical Research Advisor, IHU-Strasbourg, Strasbourg, France**

January 2019 - Present

**Research supervisor, CAMMA lab, IHU-Strasbourg and Cattolica University of Rome**

- Co-supervisor of Dr Gayani Gunawardena, a graduating medical doctor from Cattolica University of Rome, Italy
- Thesis co-relator of Dr Giovanni Guglielmo Laracca, a physician specializing in General Surgery from Sapienza University of Rome, Italy
- Co-supervisor of Dr Maria Vannucci, a graduating medical doctor from Tor Vergata University of Rome, Italy
- Co-supervisor of interns from the “Imagerie, Robotique, Ingénierie pour le Vivant” (IRIV) Master of the University of Strasbourg

January 2019 - Present

**Surgical lab trainer at IHU-Strasbourg/IRCAD, France**

- Laparoscopic General Surgery Intensive Course, Flexible Endoscopy for Surgeons, Surgical Endoscopy University Diploma, Bariatric Endoscopy Masterclass

January 2019 - Present

**Certified trainer, da Vinci System, Intuitive Surgical, Strasbourg, France**

December 2017 - Present

**Faculty at Business Engineering and Surgical Technologies (BEST), IHU-Strasbourg/IRCAD, France**

August 2017 - Present

**Coordinator of “GLORIA: gastroesophageal reflux application”**

- R&D to develop a wearable capable of monitoring gastroesophageal reflux disease and other functional gastrointestinal disorders of infants
- Incubated by the Pediatric Device Committee (PDC), Prof. James Wall, Stanford Byers Center for Biodesign, Stanford University, California, USA

## SCIENTIFIC EXPERIENCE

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### Selected publications:

- **Mascagni P.** et al. "Artificial intelligence for surgical safety: automatic assessment of the critical view of safety in laparoscopic cholecystectomy using deep learning." *Annals of Surgery* 2020.
- **Mascagni P.** et al. "A computer vision platform to automatically locate critical events in surgical videos: documenting safety in laparoscopic cholecystectomy." *Annals of Surgery* 2021.
- **Mascagni P.** et al. "Intraoperative time-out to promote the implementation of the critical view of safety in laparoscopic cholecystectomy: a video-based assessment of 343 procedures." *Journal of the American College of Surgeons* 2021.
- **Mascagni P.** et al. "Multicentric validation of EndoDigest: a computer vision platform for video documentation of the critical view of safety in laparoscopic cholecystectomy." *Surgical Endoscopy* 2022.
- **Mascagni P.** et al. "New intraoperative imaging technologies: Innovating the surgeon's eye toward surgical precision." *Journal of Surgical Oncology* 2018.
- **Mascagni P.**, Padoy N. "OR black box and surgical control tower: Recording and streaming data and analytics to improve surgical care." *Journal of Visceral Surgery* 2021.
- **Mascagni P.** et al. "Democratizing endoscopic submucosal dissection: single-operator fully robotic colorectal endoscopic submucosal dissection in a pig model." *Gastroenterology* 2019.
- **Mascagni P.** et al. "Democratizing Flexible Endoscopy Training: Noninferiority Randomized Trial Comparing a Box-Trainer vs a Virtual Reality Simulator to Prepare for the Fundamental of Endoscopic Surgery Exam." *Journal of the American College of Surgeons* 2022.
- Maier-Hein L. et al. "Surgical data science—from concepts toward clinical translation." *Medical image analysis* 2022.

### [PubMed indexed publications](#)

### Awards:

- Winner of BEST Innovation Course 2017, IHU-Strasbourg/IRCAD, Strasbourg, France

### Research grants:

- Feasibility grant for "MOSAIC for Upgraded Surgical Education (MUSE)". Co-principal investigator (PI) con Jean-Paul Mazellier, PhD. IHU-Strasbourg, France
- Innovation grant for "Image Analysis Based Intraoperative Time-Out (ABITO): An automated safety check for cholecystectomy". Co-PI with Prof. Nicolas Padoy and Prof. Bernard Dallemagne. IHU-Strasbourg, France
- Feasibility grant for "Simulation-based curriculum to prepare for the Fundamental of Endoscopic Surgery (FES) manual skills test: a randomized study comparing an analogic vs. virtual reality training platforms". Co-PI with Prof. Silvana Perretta. IHU-Strasbourg, France
- EAES Research Grant 2018 winner for "Image Analysis Based Intraoperative Time-Out (ABITO): An automated safety check for cholecystectomy". Co-PI with Prof. Nicolas

Padoy

- Feasibility grant for “Image Analysis Based Intraoperative Time-Out (ABITO): An automated safety check for cholecystectomy”. Co-PI with Prof. Nicolas Padoy and Prof. Bernard Dallemagne. IHU-Strasbourg, France

#### **Selected invited lectures:**

- “Imaging analysis for automatic localization of critical events in surgical videos”, 50<sup>th</sup> Congress of Korean Society of Endoscopic & Laparoscopic Surgeons (KSELS), Daegu, Korea, 2022
- “SAGES Critical View of Safety Challenge”, 2022 SAGES Annual Meeting in Denver, Colorado
- “AI based intraoperative cognitive aids for bile duct injury prevention” 2022 Wintermeeting, EAES, Barcelona, Spain
- “AI for training: What can we learn from surgery?” EndoscopyOnAir, 2022
- “How to get started with Surgical AI”, WebSurg & IRCAD, Strasbourg, France, 2021
- “CONDOR: Connected Optimize Network & Data in Operating Rooms”, Surgical Data Science II International Workshop, June 2019, Rennes, France

#### **Scientific societies:**

- Global Surgical AI Collaborative (GSAC)
  - Co-founder and Chief Scientific Officer
- European Association for Endoscopic Surgery (EAES)
  - Elected young member of the Technology Committee
- Society of American Gastrointestinal and Endoscopic Surgeons (SAGES)
  - Invited member of the Surgical Data Science Task Force and the AI Task Force
- Association for Surgical Education (ASE)
  - Invited member of the AI Task Force
- Società Italiana Chirurgia Endoscopica e Nuove Tecnologie (SICE)

#### **Organization of scientific meetings:**

- General Chair of International Challenge on Critical View of Safety, by Society of American Gastrointestinal and Endoscopic Surgeons (SAGES).
- Co-director and Organizer of the Surgical Data Science Summer School 2022, Strasbourg, France.
- Organizer and Program Chair of Clinical Translation of Medical Image Computing and Computer-Assisted Interventions (CLINICCAI) 2021 (Virtual) and 2022 (Singapore).
- Organizer of the Medical Image Computing and Computer-Assisted Interventions (MICCAI) workshop entitled “MULTIDIMENSIONAL & MULTIMODAL ANATOMY FOR COMPUTER SCIENTISTS” (MD.Anatomy)
- Co-leader of working group on ‘Data Use’, Surgical Video Data Conference, by Society of American Gastrointestinal and Endoscopic Surgeons (SAGES), Houston, USA.
- Co-organizer of the EAES Wintermeeting 2022, Barcelona, Spain.

#### **Editorial activities:**

- Junior editor, Artificial Intelligence Surgery, OAE Publishing Inc.
- Grant reviewer for the Dutch Research Council (NWO)
- Ad-hoc reviewer for Annals of Surgery, British Journal of Surgery, Journal of the American College of Surgery, Surgical Endoscopy, Journal of Computer Assisted Radiology and Surgery, European Journal of Surgical Oncology, EAES, etc.

#### **Book chapters:**

- Deepak Alapatt and Pietro Mascagni, Vinkle Srivastav, Nicolas Padoy “Neural networks and deep learning” in “Artificial Intelligence in Surgery: AI application for Surgeons” by Daniel A. Hashimoto. Mc Graw Hill 2021
- Pietro Mascagni, Barbara Seeliger, Bernard Dallemagne “Bile duct injury in laparoscopic cholecystectomy”. PROACI, 2021
- Marco Gallinella Muzi, Agnese Cianfarani and Pietro Mascagni. “Ernie rare” in “Chirurgia Generale” by Francesco Minni, pp. 38-39. CEA casa editrice Ambrosiana, 2019
- Marco Gallinella Muzi, Agnese Cianfarani, Claudia Mosconi, Marco Colella and Pietro Mascagni. "Self-Gripping Mesh Repair in Primary Inguinal Hernia." In “The Art of Hernia Surgery” by Giampiero Campanelli, pp. 271-283. Springer, Cham, 2018

## **VOLUNTARY AND OTHER EXPERIENCES**

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April 2013 - June 2015

#### **Beelief**

- Founder and President of Beelief, a student-led non-profit aimed at fostering students' participation in activities of social values

September 2012 – June 2015

#### **Segretariato Italiano Studenti di Medicina (SISM), Rome, Italy**

- Sapienza University of Rome local committee

June 2013 - November 2015

#### **Student representative, Faculty of Medicine and Dentistry Council, Sapienza University of Rome, Italy**

- Elected to advocate for the internationalization of medical curriculums

July - August 2013

#### **Medical volunteer, Nkoaranga Lutheran Hospital, Arusha, Tanzania**

September 2011 - December 2012

#### **Project Manager, Tinap for Peace and Development Organization (TIPDO), Sierra Leone**

- Responsible of health development
  - Kunsho Community Health Center project coordinator
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