



UNIVERSITÀ DEGLI STUDI DI NAPOLI
FEDERICO II

itee^{PhD}
information technology
electrical engineering



DIE
TI

UNI
NA

PhD Student

Daniilo Calderone

Innovative diagnostic/therapeutic models and tools for healthcare based on ICT Technologies

Tutor:

Prof. Mario Cesarelli

Cycle: 37th

co-Tutor:

Prof. Fabrizio Clemente

Year: First

My background

Education

- MSc degree: Biomedical Engineering MSc
- University: University of Naples “Federico II”



PhD Student

- PhD start date: 01/01/2022
- Scholarship type: PON MUR
- Partner company: Santobono Innovation S.R.L.

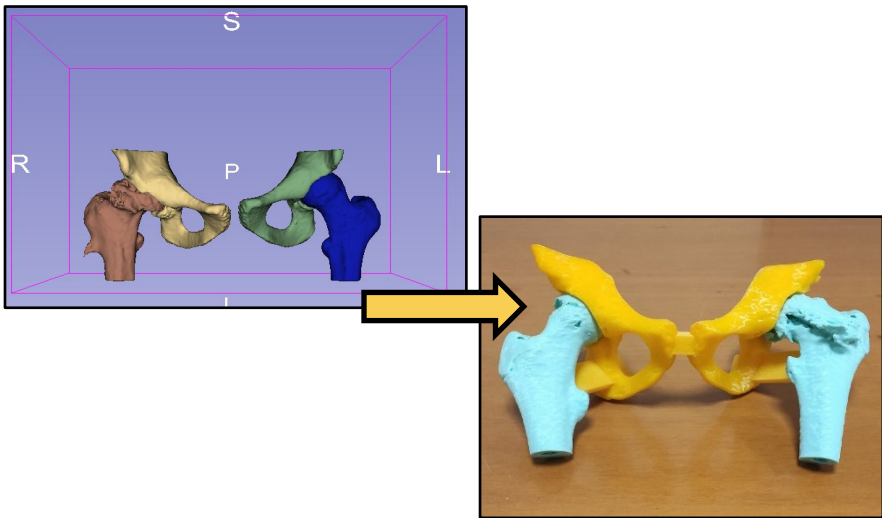


Research field of interest

Two main research topics

3D Printing

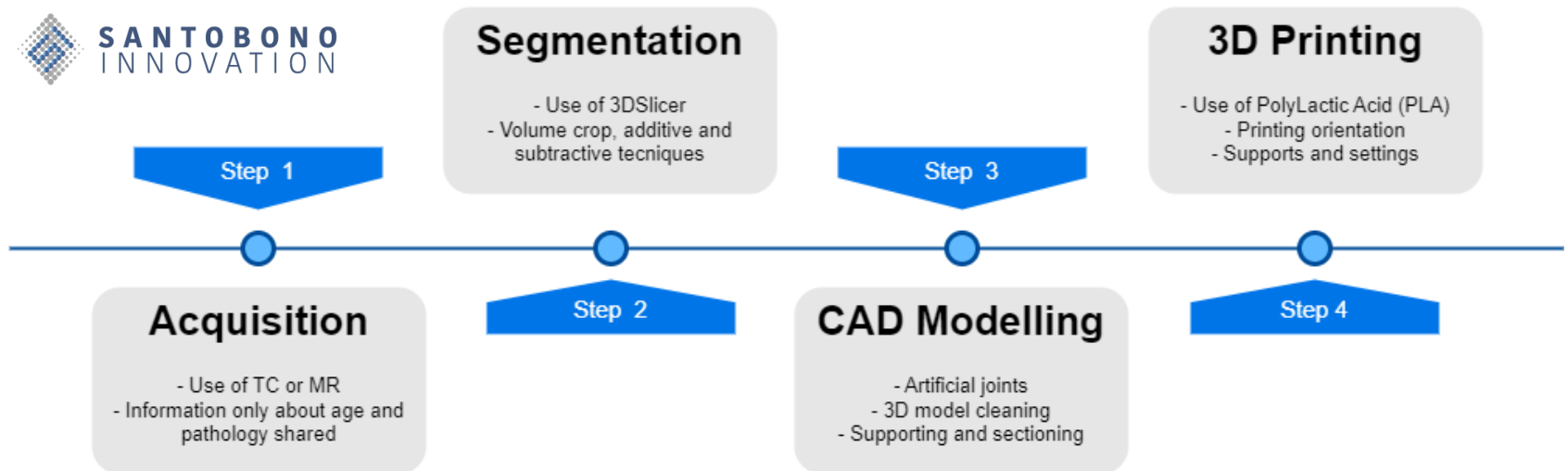
Telemedicine



Research activity: Overview

Application of 3D printing technology in healthcare

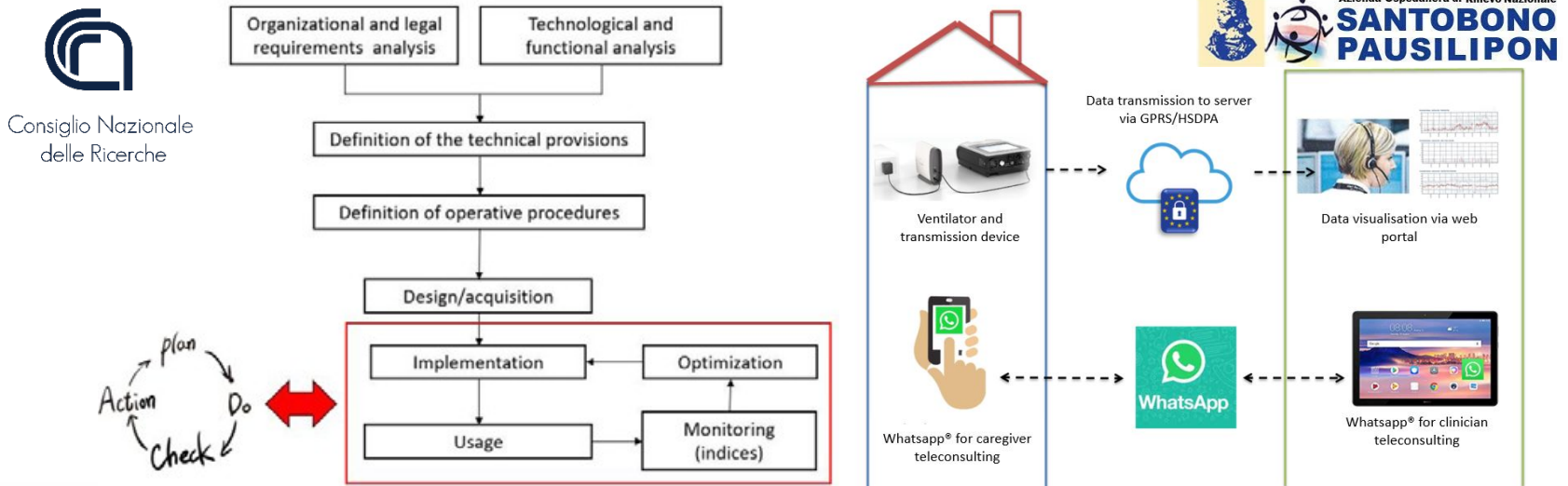
3D printing of anatomical models of paediatric patients to assist surgeons in preoperative planning and surgical simulation



Research activity: Overview

Management, Quality measurement and technological research in the field of telemedicine

Guardian Angel: a telemonitoring project for paediatric patients on home pulmonary ventilation



Summary of study activities

Ad Hoc PhD courses

- **Statistical data analysis for science and engineering research**
- **Big Data Architecture and Analytics**
- **Data Science for Patient Records Analysis**

And others...

Events and conferences

- **Expert3D course: 3D Printing and its clinical implementations, IA applied on medical images**
- **IA Conference in Barcelona**

Products

[1]	<p><i>“Guardian Angel 2.0: A telemedicine service for children with home mechanical ventilation”</i> Authors: Anna Dolcini, Luigi Iuppariello, Danilo Calderone, Mario Cesarelli, Fabrizio Clemente Journal of publication: “Revue Roumaine Des Sciences Techniques Série Électrotechnique Et Énergétique”</p> <p>Status: published (2022)</p>
[2]	<p><i>“Use of Three-Dimensional Printing Technology for Supporting the Hip Reconstruction Surgery in Paediatric Patients”</i></p> <p>Status: to be submitted</p>

3D Printed anatomical models:

2 anatomical models for the orthopaedics (1 paediatric hip bone and 1 tibia and foot bones)

2 anatomical models for the neurosurgery (1 spine bones section and 1 skull bones)

Products



Danilo Calderone – YEP

Future developments

3D Printing

- **Use of 3D Printing for the support of otological surgery for cochlear implants**
- **Improvements on 3D Printing for brain surgery**

Telemedicine

- **Management and Quality measurements for a recently started 2nd-opinion teleconsult project**
- **Study and technical assistance on the healthcare model and data analysis.**

***Thank you for
your attention***