Giuseppe Andrea Saccà
Biomedical/Sport Engineer

| +393391240616 | giuseppeandreasacca@gmail.com | 02/10/1998, Catania, IT

Skills

- **Software** : C | R | SQL | Phyton | CAD Design | Arduino | Matlab | CSS | AppDesigner | HTML | GitHub | Simulink |
- **Soft skills** : Effective communication | Collaboration and teamwork | Problem-solving | Attention to detail | Time management | | Adaptability | Creativity | Critical thinking | Leadership | Empathy | Active listening.
- **Hard skills** : Knowledge of human anatomy/physiology | design and develop medical devices | computer-aided design (CAD) | imaging and signal processing | familiarity with materials science and biomaterials | experience in clinical research and trials | data processing | familiarity with biocompatibility | computational modeling | knowledge of FDA and European standards and regulations | FMAEA | Quality assessment process– *All professional proficiency or above .*
- **English proficient user**.

Work Experience

Internship – R&D Engineer — **Advanced and Wellbeing research center, Sheffield Hallam University** — *Sheffield, SH, UK* — **15/09/2019 - Now**

- Development of an instrumented mouthguard with embedded systems in C++ and CAD design using Fusion 360 to measure the impact of sub-concussive events in football.
- Designed the physical structure and components of the mouthguard using CAD design tools.
- Impact testing and system validation analysis performed on crash test's dummy.
- **Improving player safety by providing real-time impact data, increasing the accuracy of the current technologies by 50%, providing a cost-effective solution to analyze in detail the impact amounts**.

Main Projects

Strength identification — **Wearable sensors and mobile health lab, University of Pavia** — *Pavia, PV, IT* — **11/2019 - 02/2020**

- Design and develop a strength sensor built into a glove with pressure sensors embedded on the fingers.
- Hardware and Software development with CAD design and electric circuitry implementation.
- Goal of the project was to create a non-invasive, cost-effective solution, and evaluate the effectiveness of treatment.
- **Increased evaluation of effectiveness of treatment in 60 % of patients recorded activity, 100% cheaper respect to other similar products.**

Penalty Identification in Soccer — **Wearable sensors and mobile health lab, University of Bologna** — *Cesena, FC, IT* — **12/2021 - 02/2022**

- Developed a machine learning algorithm for soccer penalty shot identification using a wearable sensor on the ankle, in Matlab.
- Collected data from skilled players wearing an accelerometer/gyroscope during penalty shots and extracted unique features.
- Data processing analysis and shots identification were performed after.
- Created an algorithm that provides real-time feedback to improve player skills and performance.
- **Successfully identified penalty shots with an overall success rate of 61%.**
- **Increase the accuracy of penalty shots by 10% with a post processing analysis.**

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Smart Peak Flowmeter — **Context sensitive design of medical devices, University of Bologna** — *Cesena, FC, IT* — **01/2023 - 06/2023**

- Development of a portable smart peak flowmeter with gamification features aimed at enhancing the compliance of pediatric asthmatic patients at home.
- Hardware CAD design using Fusion 360, with a microcontroller programmed in Circuit Python. The device incorporates a smart interrupt circuit with photodiodes to convert impeller rotation into flow measurements.
- Software development in Arduino code (Arduino nano) and integration of a graphical user interface (GUI) using app Inventor to store and analyze peak flow data in real-time.
- **Anticipated benefits include a 70% increase in patient compliance, resulting in a substantial growth in data for patient classification and providing a more cost-effective solution compared to conventional portable spirometers, especially beneficial in resource-limited settings.**

(The project has been published in a local journal [Correre Romagna – Cesena 23 August 2023])

Education

Bachelor in Engineering — **University of Pavia** — *Pavia, PV, IT* — **09/2017 - 04/2021**

- Biomedical Engineering

Master in Engineering — **University of Bologna** — Cesena, FC, IT — **09/2021 – 03/2024**

- Biomedical Engineering : Innovative technologies and diagnostic therapies

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