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[Portfolio website](#)

Interdisciplinary researcher with a PhD in cognitive neuroscience and a background in physics and game development. Interested in bridging the gap between healthcare/education and digital technology by developing customized experience for end user. Experience with data analysis, statistical inference, data modelling. Highly adaptable and able to operate effectively within fast-changing environments proven by work experience in diverse fields and different countries.

Education

PhD in Cognitive Neuroscience, UCL UK	2015/2020
MSc (Distinction) in Computer Games and Entertainment, Goldsmiths University UK	2014/2015
BSc, MSc (Distinction) Physics, University of Rome II Italy	2006/2012

Experience

Lead Unity Developer, part-time 2017 – ongoing
SoftV | London, UK

- Developed the [Listen-In](#) and [Swan](#) games for treatment of aphasia in adults and developmental difficulties in children. Listen-In, released April 2021, delivers 100 hours of therapy with over 30 hours of game content only. The game has been already listed in research publications reporting an increase of ~30% in listening accuracy in patients after a stroke
- Designed and implemented the frontend part of the game (gameplay, UI) through iterations with feedbacks from focus groups to improve user experience (Listen-In)
- 2D Physics based gameplay for the game content (Listen-In)
- Contributed to the design and implementation of the backend for the data collection using PHP and MySQL (Listen-In)
- Lead a small team consisting of 2 two artist, one game designer, one developer to manage the releases and iterations of the game (Listen-In)
- Improved research output by adding two mini-games assessing improvements while using the app (Swan)
- Implemented data collection and storage using PHP (Swan)
- Successfully delivered final version for Swan going into clinical trial in April 2021

Postdoc Researcher (Cognitive Neuroscience) Jan 2021 – ongoing
University College London | London, UK

- Developing a quantitative mathematical model for distinguishing different contributions to navigation errors in people at risk of Alzheimer's. The model is being developed in Matlab using the stats and global optimization toolboxes
- Developing a CAVE VR system to perform electrophysiology experiments on mice while performing navigation tasks. Includes an interface that will be used by the experimenter to control experiments in real-time. Portions include i) network (TCP/UDP) programming for client/server communication ii) Unity editor customization to enable experimenters to create/setup experiments requiring only a minimum amount of code iii) low-level programming to synchronize the Unity signals with the electrophysiology recording system

Experience (continuing)

PhD Researcher (Cognitive Neuroscience)

2016 – 2020

University College London | London, UK

- Managed self-led PhD research project within inter-disciplinary working group
- Conceived/designed and created different VR studies using HTC Vive to assess cognitive decline in early onset Alzheimer's disease
- Developed shader-based techniques in HLSL to improve visual saliency of the experience
- Implemented local backend to let clinicians customize the study properties
- Data collection, cleansing, processing, and manipulation using Matlab, Python, R and SPSS
- Statistical modelling based on ANOVA, GLM (statistics and machine learning toolbox in Matlab)
- Published results in high impact scientific journals ([Google Scholar profile](#)). One study is currently in the top 5% of all research outputs from research articles of that journal with similar age

Junior .NET developer

01/2013 – 08/2014

Electric80 S.p.A | Reggio Emilia, Italy

- Using company proprietary developed in .NET (C#) I implemented the management of automated fork-lift vehicles used for storing and shipping of goods in the client's warehouse
- system application for controlling two automated fork-lift vehicles moving client's goods on pallets. The algorithm needed to prioritize/choose orders from the warehouse management system to plan efficiently the routes between the fork-lift vehicles. C# / NHibernate
- Development of a client user interface needed to select available products to create shipping pallets and prioritize goods release in high demand from the production line. C# / Entity Framework 5 / WPF / WCF
- Development of a warehouse management system using SQL. Designed database structure using normalization principles. Created queries and automated stored procedures to view products, create shipping and automated reorganization of storage of goods in the warehouse

Skills and Interests

Legend: experienced (e), intermediate (i), basic (b)

Programming: C# (e), SQL (e), Matlab (e), C++ (i), Python (i), R (i), PhP (b), HLSL (b), Java (b)

Software: Unity (e), MATLAB (e), SPSS (i), Unreal (b), Maya (b)

Languages: English (e), Italian (mother tongue)

Interests: Charity runner with [Goodgym](#). Bike tourist. Seasoned basketball player. *Arduino* lover. Amateur cook.
