Andrea Castegnaro, PhD

Curriculum Vitae

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Interdisciplinary researcher with a can-do attitude. PhD in Cognitive Neuroscience with a background in physics and game development. Interested in bridging the gap between healthcare/education and digital technology for specific category of people. Experience with data analysis, statistical interference and 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 and over 30 hours of game content. 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 target specific 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 of artists, game designers, developers to deliver releases and manage different iterations of the game (Listen-In)
- Improved gameplay experience with data collection for assessing improvements through the app by adding two mini-games (Swan). Swan is going into clinical trial in April 2021.
- Implemented data collection and storage using PhP API (Swan)

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

- Developing a mathematical model for distinguishing different contributions to navigation errors made by people at risk of Alzheimer. 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 network (TCP/UDP) programming for client/server communication. Customization of Unity editor to enable experimenters to create and setup experiments with a minimum amount of code required

Experience (continuing)

PhD Researcher (Cognitive Neuroscience)
2016 – 2020

University College London | London, UK

- Conceived and managed self-led PhD research project within inter-disciplinary working group
- Designed and created different VR tasks using HTC Vive to assess cognitive decline in early onset Alzheimer's disease
- Developed a shader-based grass technique in HLSL necessary for one of the experiment manipulations
- Implemented local backend to let clinicians customize the task
- 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 software written in C# .NET I implemented algorithms to control dispatching orders to laser guided vehicle and a client user interface using WPF
- Using company proprietary software written in SQL I built the database to store information of the client products, create views with queries using Entity Framework and manage the automatic shipping using stored procedures

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.