

Personal Profile

Positive, self-motivated, energetic and friendly person who enjoys working alone and in teams. Advanced knowledge of maths, physics & computing, but hobbies in many fields. Creative and original approach to problem solving. Experienced innovating methodologies for treatment & diagnosis of the heart using MRI and 3D ultrasound. Have designed and developed new methods (and software) for visualisation, processing, modelling and analysis of cardiac motion and electrical activity. R&D at Oxford University & Imperial College, co-directing teams of 3-5 people, and coordinating evaluation of protocols with medical teams at Royal Brompton, Guys & John Radcliffe Hospitals. **Singled out at Uni & work for “Lateral, Out of The Box Thinking”, with new approaches (Arts/Dyslexia).**

Key Skills & Attributes

- **Advanced MATHS + IT + AI / Analytical Reasoning / CREATIVE & ORIGINAL**
- **LATERAL THINKING:** *Creative New Approach* to **PROBLEM SOLVING**, from *Arts + Dyslexia*.
- **Team Work & Coordination** (research projects in/between university & hospital teams).
- **Communication** (conference talks, lectures, one-to-one on technical & managerial levels).
- **PUBLICATIONS (50+ articles in leading Peer-reviewed Journals & Conference Proceedings).**

Employment

2002-2007 – **Imperial College London (ICL), Department of Computing.**

Postdoctoral Research Fellow working on AI Cardiac MRI projects.

- Coordinated research projects including clinical case studies with Guys Hospital.
- Developed MRI-guided electrophysiology study for catheter ablation of cardiac foci.
- Investigated electro-mechanical coupling using EP studies, MRI & image registration.
- Helped developing an interactive 4-dimensional MRI Atlas of the Heart.
- Collaborated teaching MSc and undergraduate courses, co-supervised PhD students.

1998-2001 – **Oxford University, Engineering Science Department.**

Postdoctoral Research Associate working on AI 3D Echocardiography projects.

- Coordinated research projects including a clinical case study with John Radcliffe Hospital.
- Developed a new method for acquisition & automated analysis of 3D ultrasound images.
- Collaborated teaching undergraduates and co-supervising D.Phil. students.

Education & Qualifications

2009,2013 – **PhD Thesis** Research Update. **Title:** “Cardiac MRI and 3D Echocardiography: Enhancement, Segmentation and Electro-Mechanical Analysis”.

1992-1997 – **PhD Research, AI - Medical Image Analysis.** Department of Computing, Imperial College London (**ICL**). Published: **Medical Image Analysis, etc.**

1991-1992 – **Thesis Research (BSc & MSc), Chaos & Complex Dynamical Systems.** Instituto de Física (**IFUNAM**), C.U., México. Published: **Physica D** and **Phys. Lett. A**.

1985-1990 – **BSc & MSc, Physics (Hons). Grade: 9.42(/10) (First-Class Honours equivalent).** Universidad Nacional Autónoma de México (**UNAM**), C.U., México City. Social service Facultad de Ciencias UNAM. Always chose the best (& hardest) teachers for each field.

1982-1985 – High-School, **Colegio Madrid**, Mexico City. **Grade: 9.84(/10). Honours Graduation.**

Additional Information

- **COMPUTING: Programming** in **C/C++**, **TCL/TK**, **VTK**, **MATLAB**, **Fortran**, **Assembler**, **HTML**, **LaTeX**, **Unix/Linux**, **Windows**, **3D+T Graphics**, **Image Processing**, electronics & hardware.
- **PUBLICATIONS:** Over **50 Articles in Leading Peer-reviewed journals** & conference proceedings: www.1D345solutions.com. Or **google me** for **public websites** such as **ResearchGate** (www.researchgate.net/profile/Gerardo_Sanchez-Ortiz) or **Academia** (www.independent.academia.edu/GerardoSanchezOrtiz), with my **PDFs & 1228 Citations**.
- **AWARDS:** Obtained Government & University **Grants** for **PhD, MSc, BSc, A-levels, Secondary & Primary Schools** (in **avant-garde active education** systems like **Summerhill**).
- **LANGUAGES:** **Spanish** (native); **English & French** (fluent); **Italian & German** (mid-level).

- **HOBBIES: Photography** (extensive work), **Cinema** (theory & practice courses, usually attended art film festivals), **Chess** (won *Colegio Madrid* High-school Tournament), **Climbing** (rock & snow, team & solo), **Tennis** (Oxford Linacre Team, London Leagues, **BTA Rating 7.2**), **Football** (11-, 7-, 5-aside, various tournaments incl. High Schools, Embassies in London, London Local Leagues), **Table Tennis** (club level), **Dance** (competition level ballroom for Oxford Uni, Rock, Salsa, **Tango**), **Literature** (well versed in Classics, some writing), **Gymnastics** (basics, could do back and front "mortal" jumps), **Piano** (self-thought), **Swimming** (2-3 times weekly in pools, always swim to nearby islands in 2-4 hours non-stop journeys, in Mexico, Greece, etc), **Cycling** (Urban Racing & as means of transport since Uni), **Sailing (RYA Day Skipper licence)**, **Travel Most Continents** for work and **Spent 8-MONTHS HITCHHIKING ALONE in EUROPE** (Mexico-USA-Europe & back, *mix of sleeping rough in parks, hostels & with new people met. An Invaluable Life-Changing Adventure* in a gap year), **Social Skills** (4 times Best-man, blessed with tens of amazing friends & partners). **Since 12yo:** self-taught Maths, Electronics, Computing, Chess, Rocketing, etc, and fixed & **Developed Electronic Equipment, Computer Games, Analysis Tools, Databases and Bio-Medical Tools** for Doctors et al.
- **ACTIVISM Political / Social / Ecological:** Co-founded **Imperial Against Imperialism society** where we organised Lectures and invited high profile speakers, uploaded videos of talks/debates). Co-wrote a **Letter (published full page in La Jornada)**, organised **Meetings** to support a **peaceful negotiation** with the uprising **EZLN** in Mexico in 1994 (spoke with the Mexican Consul to the UK). Member of **e-Soc** (environmental society of ICL), organised events.
- **MISC:** Attended **Progressive Avant-Garde Primary Schools (Kairos, Melanie Klein)** with emphasis on **Social Responsibility**. / Mentions: **Best Essays of the Generation** (among 200 students) on various subjects such as **History, Psychology, Literature, in Colegio Madrid** High-school, among some very bright pupils, many of them children of famous intellectuals.
- **HOLD: British & Mexican Passports / International Driving & Sailing Licences.**

Recent Activities (Examples)

- 2020-2021 – **SINGLE-FATHER & ONLY-CARER of J.A.C. (6 y.o. boy). Science, Technology & Business Consultant. Apps Development.** See <https://1D345solutions.com> (Beta).
- 2013-2019 – **FATHER & MAIN-CARER.** Managed 11 house-moves, legal issues, negotiations.
- **Organised 11 house moves between UK, Spain and Mexico.**
 - **CARE & EDUCATION of Joan Aer Carl (from birth till now)**, from Sports (*football, climbing, swimming, tennis, fencing, wrestling*) to *Reading, Maths, Piano, Chess, maintaining his English & Spanish*. Very often praised by other parents as most patient and devoted one. **Spent 5 & 7 Months in Mexico as Only-Carer. Joan Aer is happy, caring, confident, social, smart, curious, funny, sporty, levelled with kids 1.5-2 years older. A Psychometric Test** revealed: Total **IQ 135** (perceptual reasoning **IQ 139**) described as: Very Superior / **Extremely High** / Upper Extreme. His **Social and Emotional skills are also Above Average**. Proud to say he is **Very Apt Socially, Physically & Intellectually; deeply Caring, Confident and a HAPPY CHILD.**
- 2007-2012 – **Start-up, Self-Development, "House-Hostel" Administrator, Thesis update.**
- **House-share Administration:** Very busy International *Hostel-like* House-share in London.
 - **Start-up:** Market research and business plan (online-business / mobile **apps development**).
 - **Self-Development:** Took many **Courses and Lectures** in varied fields. Gave invited Lectures.
 - **PhD Thesis update:** Recover and Setup Octane SGI workstations and updated research.
 - **Helped Partner Develop her Career:** Gave ideas, wrote work emails, negotiated salaries.
 - **LEARN & PRACTICE:** Self-thought **Piano**; weekly **Tango** classes & milongas; played weekly in **2 Football Leagues** of 7- & 5-aside teams (London Leagues); **Tennis Tournaments (ASPTL, BTA Rating 7.2)**; **Climbing Snow & Rock in Teams & Solo** excursions (e.g. Alps 300m vertical Wall & Snow Treks, Popocatepetl & Iztaccíhuatl (several times), **Solo Climbing** in Norway, Austria, Mexico, etc.); **Sailing course:** 6-months theory & 5-days on-board exams (obtained **RYA Sailing licence**), sailed British Isles & later **Crossed English Channel** with ICL team (captained 35% of the trip), **Invited Lecturer** in London, Oxford and German Universities.
 - **COURSES, LECTURES & BOOKS (e.g.): Neuro-sciences & Genetics:** *Biology & Human Behaviour* (25 hours Lectures, MIT), *Neo-Darwinism* (Richard Dawkins seminal books); **AI & Human Self-Awareness:** *Consciousness Explained* (Daniel Dennett), *Emperor's New Mind & Shadows of the Mind* (Roger Penrose); **Early Humans History:** *The Ascent of Man* (20 hours), *Guns, Germs and Steel* (4hours), *Human Origins* (Richard Leaky & Stephen Gould seminal books); **History & Arts:** *History of Human Languages* (40 hours Lectures), *History of Western Music & Civilization* (ICL Lectures of Roderick Swanston, recorded & uploaded to web); **Physics:** *Brief history of time* (30 hours) & *The Universe in a Nutshell* (20 hours) (Stephen Hawking); **Politics: Geopolitics** (ICL Lectures), Noam **Chomsky** (seminal books/Lectures); **etc.**