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José Alonso Solís-Lemus

Current position

2019-Present **Post-doctoral Research Associate**, *Developing image processing and computer vision algorithms for the analysis of cardiac images.*, Cardiac Electro-Mechanics Research Group, King's College London & Imperial College London.
Prof. Steven Niederer

Education

2015–2019 **Ph.D., Biomedical Engineering**, *City, University of London*, collaborating with Randall Centre for Cell & Molecular Biophysics, Kings College London.

2007–2013 **B.Sc., Applied Mathematics (1st class, Hons)**, *Instituto Tecnológico Autónomo de México (ITAM)*, Mexico City.

2007–2013 **B.Eng., Telematics Engineering (1st class, Hons)**, *Instituto Tecnológico Autónomo de México (ITAM)*, Mexico City.

PhD Dissertation

Title *Segmentation and shape tracking of overlapping macrophages in fluorescent microscopy images*. Supervised by Dr Constantino Carlos Reyes-Aldasoro

Abstract The thesis investigates the complex movement, shapes and overlapping of migrating objects, with special emphasis on images of fluorescently labelled macrophages.

Selected Publications

2023 **Evaluation of an open-source pipeline to create patient-specific left atrial models: A reproducibility study**, ***Solís-Lemus***, *Baptiste, Barrows, Sillett, Gharaviri, ···, Roney, and Niederer*, Computers in Biology and Medicine.

2021 **Predicting atrial fibrillation recurrence by combining population data and virtual cohorts of patient-specific left atrial models**, *Roney, Sim, Yu, Beach, Mehta,* ***Solis-Lemus****, ···, and Niederer*, Circulation. Arrhythmia and electrophysiology.

2020 **A simulated single ventilator/dual patient ventilation strategy for acute respiratory distress syndrome during the COVID-19 pandemic**, ***Solís-Lemus****,Costar, Doorly, Kerrigan, Kennedy, Tait, Niederer, Vincent and Williams*, Royal Society Open Science.

2020 **CemrgApp: An interactive medical imaging application with image processing, computer vision, and machine learning toolkits for cardiovascular research**, *Razeghi,****Solís-Lemus****, ···, and Niederer*, SoftwareX: ScienceDirect.

2020 **Comparative study of contact repulsion in control and mutant macrophages using a novel interaction detection**, ***Solís-Lemus****, Sánchez-Sánchez, Marcotti, Burki, Stramer and Reyes-Aldasoro*, Journal of Imaging.

Conference papers

2020 **Software Framework to Quantify Pulmonary Vein Isolation Atrium Scar Tissue**, ***Solís-Lemus****, Razeghi, Roney, Sim, Mukherjee, Williams,O'Neill, Niederer*, Computing in Cardiology, Rimini, Italy.

2018 **Analysis of interactions of migrating macrophages**, ***Solís-Lemus***, *Stramer, Slabaugh and Reyes-Aldasoro*, Medical Image Understanding and Analysis, Southampton, England, CCIS, Springer.

2018 **Shape Analysis and Tracking of Migrating Macrophages**, ***Solís-Lemus***, *Stramer, Slabaugh and Reyes-Aldasoro*, IEEE Symposium on Biomedical Imaging, WA, US.

Fellowships, Awards, and Certifications

2023 Medical Device Software Training — *BSI Training Academy*

2018 Associate Fellow — *Higher Education Academy (HEA)*

2017 City Graduate School **Conference Travel Bursary** — *University of London*

2015 PhD Studentship — *SMCSE. City, University of London*

Academic Activities

2020, 2022 **Teaching Assistant**, *Computational Applied Biomathematics (BEng)*, King's College London.
Prof Steven Niederer

2018 - 2019 **Sessional Tutor**, *Foundation Mathematics / Statistics*, Kaplan International College London.
Dr Radmila Topalovic

2016 - 2018 **Graduate Teaching Assistant**, *Medical Imaging Modalities (BEng) / Medical Imaging (MEng) / Biosignal and Image Processing (BEng)*, City, University of London.
Dr Constantino Carlos Reyes-Aldasoro

Other Professional Experience

2014 **Software Developer**, *Developer specialising in Java and Network monitoring*, Eficiencia Informativa (transl. *Information Efficiency*).
Carlos Fuentes

2014 **Consulting - Research project assistant**, *Feasibility study for the Puebla ITS Technologies Project with the assessing of the deployment and integration of intelligent transportation system technologies into the Bus Rapid Transit System*, ITAM, Mexico.
Dr Andre Possani Espinosa

Voluntary

2017-2019 **Science writer**, *Student Contribution*, Institute of Physics Publishing, Bristol.

Software development

Since 2020 **CemrgApp**, *An Interactive Medical Imaging Platform with Image Processing and Computer Vision Toolkits for Cardiovascular Research.* .

2020 **Split-Vent**, MATLAB® *package for simulation of a dual-patient/single ventilator strategy.*.

2018 **PhagoSight/Macrosight**, MATLAB® *packages for segmentation and tracking of fluorescent microscopy time-lapse sequences*, Collaboration with CC Reyes-Aldasoro.

Computer skills

Programming `C++, Python, Matlab, Java, Julia, bash`

Imaging MITK, ITK, VTK, 3D Slicer, ICY, ImageJ

Statistics `R, SAS, SPSS`