

Partner Search Form

Horizon Europe Health



Contact :

Organisation :	INSERM
Lab/Unite/Department :	U1254 ; IADI lab
City :	Nancy
Country :	France
Contact person :	Julien OSTER
E-mail :	Julien.oster@inserm.fr
Website	https://iadi.univ-lorraine.fr/

Short introduction of key areas of institute's research:

Former participation in an FP European project? ~~YES~~/NO

Project title / Acronym:

Case No.	Case Name	Case Type	Case Status	Case Description	Case Details	Case Notes	Case Attachments	Case History	Case Comments	Case Actions
1	John Doe	Case 1	Open	Case 1 Description	Case 1 Details	Case 1 Notes	Case 1 Attachments	Case 1 History	Case 1 Comments	Case 1 Actions
2	Jane Smith	Case 2	Closed	Case 2 Description	Case 2 Details	Case 2 Notes	Case 2 Attachments	Case 2 History	Case 2 Comments	Case 2 Actions
3	Bob Johnson	Case 3	Pending	Case 3 Description	Case 3 Details	Case 3 Notes	Case 3 Attachments	Case 3 History	Case 3 Comments	Case 3 Actions
4	Alice Brown	Case 4	Open	Case 4 Description	Case 4 Details	Case 4 Notes	Case 4 Attachments	Case 4 History	Case 4 Comments	Case 4 Actions
5	Charlie Davis	Case 5	Closed	Case 5 Description	Case 5 Details	Case 5 Notes	Case 5 Attachments	Case 5 History	Case 5 Comments	Case 5 Actions
6	Diana Prince	Case 6	Pending	Case 6 Description	Case 6 Details	Case 6 Notes	Case 6 Attachments	Case 6 History	Case 6 Comments	Case 6 Actions
7	Frank Miller	Case 7	Open	Case 7 Description	Case 7 Details	Case 7 Notes	Case 7 Attachments	Case 7 History	Case 7 Comments	Case 7 Actions
8	Grace Lee	Case 8	Closed	Case 8 Description	Case 8 Details	Case 8 Notes	Case 8 Attachments	Case 8 History	Case 8 Comments	Case 8 Actions
9	Henry Wilson	Case 9	Pending	Case 9 Description	Case 9 Details	Case 9 Notes	Case 9 Attachments	Case 9 History	Case 9 Comments	Case 9 Actions
10	Ivy Green	Case 10	Open	Case 10 Description	Case 10 Details	Case 10 Notes	Case 10 Attachments	Case 10 History	Case 10 Comments	Case 10 Actions
11	Jack White	Case 11	Closed	Case 11 Description	Case 11 Details	Case 11 Notes	Case 11 Attachments	Case 11 History	Case 11 Comments	Case 11 Actions
12	Karen Black	Case 12	Pending	Case 12 Description	Case 12 Details	Case 12 Notes	Case 12 Attachments	Case 12 History	Case 12 Comments	Case 12 Actions
13	Liam Grey	Case 13	Open	Case 13 Description	Case 13 Details	Case 13 Notes	Case 13 Attachments	Case 13 History	Case 13 Comments	Case 13 Actions
14	Mia Blue	Case 14	Closed	Case 14 Description	Case 14 Details	Case 14 Notes	Case 14 Attachments	Case 14 History	Case 14 Comments	Case 14 Actions
15	Noah Red	Case 15	Pending	Case 15 Description	Case 15 Details	Case 15 Notes	Case 15 Attachments	Case 15 History	Case 15 Comments	Case 15 Actions
16	Olivia Yellow	Case 16	Open	Case 16 Description	Case 16 Details	Case 16 Notes	Case 16 Attachments	Case 16 History	Case 16 Comments	Case 16 Actions
17	Peter Purple	Case 17	Closed	Case 17 Description	Case 17 Details	Case 17 Notes	Case 17 Attachments	Case 17 History	Case 17 Comments	Case 17 Actions
18	Quinn Green	Case 18	Pending	Case 18 Description	Case 18 Details	Case 18 Notes	Case 18 Attachments	Case 18 History	Case 18 Comments	Case 18 Actions
19	Rachel Brown	Case 19	Open	Case 19 Description	Case 19 Details	Case 19 Notes	Case 19 Attachments	Case 19 History	Case 19 Comments	Case 19 Actions
20	Sam Black	Case 20	Closed	Case 20 Description	Case 20 Details	Case 20 Notes	Case 20 Attachments	Case 20 History	Case 20 Comments	Case 20 Actions
21	Tina Grey	Case 21	Pending	Case 21 Description	Case 21 Details	Case 21 Notes	Case 21 Attachments	Case 21 History	Case 21 Comments	Case 21 Actions
22	Uma White	Case 22	Open	Case 22 Description	Case 22 Details	Case 22 Notes	Case 22 Attachments	Case 22 History	Case 22 Comments	Case 22 Actions
23	Victor Blue	Case 23	Closed	Case 23 Description	Case 23 Details	Case 23 Notes	Case 23 Attachments	Case 23 History	Case 23 Comments	Case 23 Actions
24	Wendy Red	Case 24	Pending	Case 24 Description	Case 24 Details	Case 24 Notes	Case 24 Attachments	Case 24 History	Case 24 Comments	Case 24 Actions
25	Xavier Yellow	Case 25	Open	Case 25 Description	Case 25 Details	Case 25 Notes	Case 25 Attachments	Case 25 History	Case 25 Comments	Case 25 Actions
26	Yara Purple	Case 26	Closed	Case 26 Description	Case 26 Details	Case 26 Notes	Case 26 Attachments	Case 26 History	Case 26 Comments	Case 26 Actions
27	Zoe Green	Case 27	Pending	Case 27 Description	Case 27 Details	Case 27 Notes	Case 27 Attachments	Case 27 History	Case 27 Comments	Case 27 Actions
28	Adam Brown	Case 28	Open	Case 28 Description	Case 28 Details	Case 28 Notes	Case 28 Attachments	Case 28 History	Case 28 Comments	Case 28 Actions
29	Eve Black	Case 29	Closed	Case 29 Description	Case 29 Details	Case 29 Notes	Case 29 Attachments	Case 29 History	Case 29 Comments	Case 29 Actions
30	Frank Grey	Case 30	Pending	Case 30 Description	Case 30 Details	Case 30 Notes	Case 30 Attachments	Case 30 History	Case 30 Comments	Case 30 Actions
31	Grace White	Case 31	Open	Case 31 Description	Case 31 Details	Case 31 Notes	Case 31 Attachments	Case 31 History	Case 31 Comments	Case 31 Actions
32	Henry Blue	Case 32	Closed	Case 32 Description	Case 32 Details	Case 32 Notes	Case 32 Attachments	Case 32 History	Case 32 Comments	Case 32 Actions
33	Ivy Red	Case 33	Pending	Case 33 Description	Case 33 Details	Case 33 Notes	Case 33 Attachments	Case 33 History	Case 33 Comments	Case 33 Actions
34	Jack Yellow	Case 34	Open	Case 34 Description	Case 34 Details	Case 34 Notes	Case 34 Attachments	Case 34 History	Case 34 Comments	Case 34 Actions
35	Karen Purple	Case 35	Closed	Case 35 Description	Case 35 Details	Case 35 Notes	Case 35 Attachments	Case 35 History	Case 35 Comments	Case 35 Actions
36	Liam Green	Case 36	Pending	Case 36 Description	Case 36 Details	Case 36 Notes	Case 36 Attachments	Case 36 History	Case 36 Comments	Case 36 Actions
37	Mia Brown	Case 37	Open	Case 37 Description	Case 37 Details	Case 37 Notes	Case 37 Attachments	Case 37 History	Case 37 Comments	Case 37 Actions
38	Noah Black	Case 38	Closed	Case 38 Description	Case 38 Details	Case 38 Notes	Case 38 Attachments	Case 38 History	Case 38 Comments	Case 38 Actions
39	Olivia Grey	Case 39	Pending	Case 39 Description	Case 39 Details	Case 39 Notes	Case 39 Attachments	Case 39 History	Case 39 Comments	Case 39 Actions

Activities performed:

My research activity spans over fifteen years and centers on biomedical signal processing, with electrocardiography (ECG) as a recurring thread across multiple clinical contexts.

A major early strand focused ECG acquisition and denoising in the MRI environment, covering the magnetohydrodynamic effect, independent component analysis and Bayesian filtering approaches, MR-compatible ECG sensors, and cardiac gating — work that bridges signal processing with practical MRI engineering.

A second substantial strand addresses on fetal ECG extraction and quality assessment, including widely cited work on non-invasive fetal ECG algorithms, signal quality indices, and the PhysioNet/Computing in Cardiology challenge on fetal ECG, as well as applications to fetal arrhythmia and QT interval detection.

More recently, my outputs have expanded into deep learning for cardiac abnormality (including analysis of ECG time-series with self-supervised learning for atrial fibrillation detection, generalizable PVC classification, or contractile dysfunction), but also multimodal heart segmentation challenges, or cardiac MRI super-resolution or image reconstruction, and finally PET/MRI radiomics for glioma characterization, reflecting a progression from classical statistical signal processing toward AI-driven, multimodal medical imaging analysis.

Expertise / Commitment offered

Description of your expertise:

My expertise lies at the intersection of artificial intelligence and multimodal cardiac data, with a particular focus on making AI methods robust to the noise, artifacts, and heterogeneity inherent to real-world physiological recordings. This is exemplified by work combining deep learning and self-supervised learning for heartbeat and R-peak detection in ECG acquired during MRI, generative adversarial networks to synthesize realistic MRI-related ECG distortions, and recurrent neural networks for atrial fibrillation burden estimation and sepsis prediction from vital signs.

I have also contributed to large-scale, generalizable AI diagnostic models — such as an atrial fibrillation detection algorithm validated across geography, age, and sex — as well as multi-institutional benchmarking efforts like the multi-modality whole heart segmentation challenge. This combination of signal-level expertise (ECG, MRI-conditional sensors, cardiac MRI) and modern AI methodology (deep learning, self-supervised and generative models) positions my work squarely in translational, multimodal cardiac AI.

Keywords specifying your expertise:

Biomedical Image and Signal Processing,
AI applied to health, multimodal cardiovascular data analysis.

Horizon Europe call identified :

HORIZON-HLTH-2027-03-TOOL-04: Virtual Human Twins (VHTs) for integrated clinical decision support in prevention and diagnosis

Do you have other partners for this topic (which partners/country)?

Profile of partner sought

Role :

- Technology development
- Research
- Training
- Dissemination
- Demonstration
- Other :

Expertise required

I agree with the publication of this document and my contact data : YES/~~NO~~