Curriculum Vitae

Diogo João Fróis Vieira

Diogo Fróis Vieira has graduated in Engineering Sciences - Biomedical Engineering at the Instituto Superior Técnico (IST), University of Lisbon, which has motivated him to initiate a Master's degree in Biomedical Engineering, with specialization in imaging, biosignals and biomedical instrumentation from the same university (2020). During his Master's, Diogo applied and was selected to integrate the reputable Erasmus program at the Technical University of Denmark (Lyngby, Denmark), where he has learned relevant topics including machine learning and signal and image processing. After returning, Diogo developed a novel computational pipeline to evaluate the organization of the cytoskeleton component a-tubulin in the scope of his Master's Thesis. Demonstrating the innovative character of his approach and his performance in other curricular units, Diogo was awarded the prize of academic excellence in 2022. He collected other academic merit (2019 (BSc), 2020 (BSc) and 2021 (MSc)) diplomas.

Reflecting Diogo's interest in the morphological attributes of tumor cellular components, in 2023, he was awarded a research fellowship in the scope of a FCT funded project (2022.02665.PTDC) aiming to decode physical and biochemical aspects of the cyoskeleton and nucleus that may serve as biomarkers of invasive gastric tumors. Under coordination of Prof. João Sanches at the Institute for Systems and Robotics (ISR), the group has been pioneer in the implementation of bioimaging tools based on immunofluorescence images to determine the impact of E-cadherin variants in tissue architecture and their association with gastric cancer development. In particular, Diogo has devised a method combining a preprocessing step for image enhancement followed by feature extraction, which allowed a comprehensive analysis of microtubule organization, including morphology, orientation, compactness, or radiality.

To increase his technical performance, he concluded 13 online courses on topics related to machine learning, mathematics and biology and has recently enrolled in a specialization course in Deep Learning (Tecnico+) in May 2024. He also participated in outreach and dissemination activities promoted by IST and ISR. Of note, Diogo is involved in teaching activities in Biomedical Engineering BSc at IST.

Evidencing his dedication and motivation, Diogo attended several national and international meetings, where he expanded scientific skills and his capacity to communicate with peers and experts. The relevance of Diogo's research is attested by the selection of his work for oral and poster presentations.

Identification

Personal identification

Full name
Diogo João Fróis Vieira

Gender
Male

Birth date
1998/03/16

Citation names

Vieira, D. F.

Author identifiers

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Knowledge fields

Engineering and Technology - Medical Engineering

Languages

Language	Speaking	Reading	Writing	Listening	Peer-review
Portuguese (Mother tongue)					
English	Advanced (C1)	Advanced (C1)	Advanced (C1)	Advanced (C1)	Advanced (C1)
German	Beginner (A1)	Beginner (A1)	Beginner (A1)	Beginner (A1)	Beginner (A1)

Education

	Degree	Classification
2020/09 - 2022/11/22 Concluded	MSc in Biomedical Engineering (Mestrado) Major in Imaging, Biosignals and Biomedical Instrumentation Universidade de Lisboa Instituto Superior Técnico, Portugal *"Unraveling the cytoskeletal organization of cancer cells: development of a novel computational approach"* *(THESIS/DISSERTATION)*	18/20
2021/10 - 2022/01 Concluded	German (Level - A1) (Outros) LanguageCraft - Línguas, Artes e Cultura, Portugal	18/20
2020/09 - 2021/02 Concluded	Mobility - ERASMUS (Master) Danmarks Tekniske Universitet, Denmark	

2017/09/11 - 2020/07/20 Concluded	BSc in Engineering Sciences - Biomedical Engineering (Licenciatura) Universidade de Lisboa Instituto Superior Técnico, Portugal	16/20

Affiliation

Science

	Category Host institution/organization	Employer
2021/10 - Current	Research Trainee (Research) Universidade de Lisboa Instituto Superior Técnico, Portugal	Universidade de Lisboa Instituto de Sistemas e Robótica, Portugal

Projects

Grant

	Designation	Funders
2023/01 - 2025/12	Desconstruir a arquitetura celular: Inteligência Artificial para prever a invasão tumoral 176015PRJ	Fundação para a Ciência e a Tecnologia, Portugal

Outputs

Publications

Conference poster

1 Vieira, D. F.; Fernandes, Maria Sofia ; Figueiredo, Joana; Ana Margarida Moreira; Seruca, Raquel; Sanches, Joao. "A computational approach for cytoskeletal organization characterization". Paper presented in *IST PhD Open Days 2023*, 2023.

2 Vieira, D. F.; Fernandes, Maria Sofia ; Ana Margarida Moreira; Figueiredo, Joana; Seruca, Raquel; Sanches, Joao. "A computational approach for cytoskeletal organization characterization". Paper presented in *SPAOM2023 – Spanish Portuguese Meeting for Advanced Optical Microscopy*, 2023.

	3	Vieira, D. F.; Fernandes, Maria Sofia ; Ana Margarida Moreira; Figueiredo, Joana; Seruca, Raquel; Sanches, Joao. "Unraveling the cytoskeletal architecture of cancer cells: a novel computational approach". Paper presented in *2023 USA-PT Leaders in Cancer Research*, 2023.
	4	Vieira, D. F.; Fernandes, Maria Sofia ; Ana Margarida Moreira; Figueiredo, Joana; Seruca, Raquel; Sanches, Joao. "Unraveling the cytoskeletal architecture of cancer cells: a novel computational approach". Paper presented in *LARSyS Annual Meeting 2023*, 2023.
	5	Fernandes, Maria Sofia ; Figueiredo, J.; Vieira, D. F.; Sanches, Joao; Seruca, R.. "Unravelling new strategies for early detection of invasive cancer cells: a special focus on the nuclear and cytoskeletal architecture". Paper presented in *AACR Annual Meeting 2023*, 2023.
	6	Fernandes, Maria Sofia ; Figueiredo, J.; Melo, S.; Vieira, D. F.; Moreira, A. M.; Maia, A.; Sanches, Joao; Seruca, R.. "Unravelling new strategies for early detection of invasive cancer cells: a focus on the nuclear architecture dynamics". Paper presented in *EACR 2022 Congress*, 2022.
Journal article	1	Diogo Fróis Vieira; Afonso Raposo; António Azeitona; Manya V. Afonso; Luís Mendes Pedro; J. Sanches. "Ultrasound Despeckling With GANs and Cross Modality Transfer Learning". *IEEE Access* (2024): https://doi.org/10.1109/ACCESS.2024.3381630. 10.1109/ACCESS.2024.3381630

Activities

Event organisation

	Event name Type of event (Role)	Institution / Organization
2022/07 - 2022/07	Advertising of Nevaro's "Holi" mobile app, within the scope of Festa da Saúde (Health Festival) held in Aveiro, Portugal with the aim of promoting healthy habits of mental health, wellbeing and performance. (2022/07 - 2022/07) Festival (Co-organisor)	Câmara Municipal de Aveiro, Portugal
2018/09 - 2018/09	Mentor in the Mentoring Programme by NAPE-IST (Núcleo de Apoio ao Estudante do Instituto Superior Técnico) aiming for a better integration of newly arrived college students. (2018/09 - 2018/09) Other (Member of the Organising Committee)	Universidade de Lisboa Instituto Superior Técnico, Portugal

Event participation

	Activity description Type of event	Event name Institution / Organization
2021/11/05 - 2021/11/05	RECPAD 2021 - National conference aiming to promote collaboration between the Portuguese scientific community in the areas of pattern recognition, image analysis and processing, computing and related areas. Conference	RECPAD 2021, the 27th Portuguese Conference on Pattern Recognition Universidade de Évora, Portugal

Association member

	Society Organization	Role
2021/10 - 2022/10	Núcleo de Engenharia Biomédica (IST)	Subsecretary of the General Assembly

Course / Discipline taught

	Academic session	Degree Subject (Type)	Institution / Organization
2023/02 - Current	Curricular Unit of Principles of Biosignals and Biomedical Imaging: Responsible for teaching the laboratory sessions (in Matlab) and for creating a project for assessment, both related to relevant topics in Biomedical Engineering.	Medical Image Processing (Licenciatura)	Universidade de Lisboa Instituto Superior Técnico, Portugal
2022/03 - 2022/05	Curricular Unit of Introduction to Biomedical Engineering: Assistance in homework correction and creation of slides for presentation in theoretical classes about introductory topics of medical imaging.	Medical Imaging (Licenciatura)	Universidade de Lisboa Instituto Superior Técnico, Portugal

Distinctions

Title

2022	Academic Excellence Diploma Universidade de Lisboa Instituto Superior Técnico, Portugal
2021	Academic Merit Diploma Universidade de Lisboa Instituto Superior Técnico, Portugal
2020	Academic Merit Diploma Universidade de Lisboa Instituto Superior Técnico, Portugal

2019	Academic Merit Diploma Universidade de Lisboa Instituto Superior Técnico, Portugal