Stanford

Pere Canals

Postdoctoral Scholar, Radiology

Bio

BIO

Pere Canals Canals is a Postdoctoral Scholar in the Department of Radiology at Stanford University, where he focuses on advancing medical imaging technologies with applications on vascular neuroradiology, with an emphasis on Stroke, under the mentorship of Dr. Jeremy Heit. Dr. Canals is an active recipient of the 2026 AHA Postdoctoral Fellowship, supporting his project GUIDE, where he is investigating how vision-language models can be leveraged in the context of acute stroke to improve speed and performance of diagnostic workflows in widely generalizable contexts. His research interests encompass medical image analysis, computer vision, deep learning, and 3D printing.

Dr. Canals earned his Ph.D. in Medicine at the Stroke Research group from the Vall d'Hebron Research Institute (VHIR) in Barcelona, Spain, under the leadership of Dr. Marc Ribó and co-supervised by Dr. Simone Balocco and Dr. Oliver Díaz, both researchers from the University of Barcelona (UB). Dr. Canals completed his doctoral studies between 2021 and 2024. His dissertation, titled "Arterial: an AI framework for the characterization of vascular tortuosity," received the highest distinction of Cum Laude. For his Ph.D., he was awarded the PERIS PIF-Salut doctoral grant by the Catalan Health Department. Moreover, he led funding acquisition and development of the "Arterial" project, securing €107,690 in funding from the Spanish Health Institute to support his research.

Prior to his doctoral studies, Dr. Canals completed a Bachelor of Science in Engineering Physics at the Universitat Politècnica de Catalunya (UPC) in Barcelona. He conducted his bachelor's thesis at the Technion - Israel Institute of Technology in Haifa, focusing on astrophysics and stellar population simulations. He then pursued a Master of Science in Biomedical Engineering at the University of Barcelona (UB), during which he participated in an exchange program at TU Delft in the Netherlands, where he was introduced to the field of deep learning. Notably, Dr. Canals achieved top 1% rankings in the Catalonia and Spain university entrance exams, earning him a prize from the Fundació Catalunya-La Pedrera.

HONORS AND AWARDS

- 2026 AHA Postdoctoral fellowship, American Heart Association (AHA) (01/01/2026-12/31/2027)
- Cum Laude distinction, Universitat Autònoma de Barcelona (11/29/2024)

PROFESSIONAL EDUCATION

- PhD, Universitat Autònoma de Barcelona (UAB) | Vall d'Hebron Institut de Reccerca (VHIR) , Medicine (2024)
- MSc, Universitat de Barcelona (UB) | Universitat Politècnica de Catalunya (UPC) , Biomedical Engineering (2020)
- BSc, Universitat Politècnica de Barcelona (UPC) , Engineering Physics (2018)

STANFORD ADVISORS

- Jeremy Heit, Postdoctoral Faculty Sponsor

Research & Scholarship

RESEARCH INTERESTS

- Brain and Learning Sciences
- Data Sciences
- Leadership and Organization
- Lifelong Learning

CURRENT RESEARCH AND SCHOLARLY INTERESTS

I have deep interest in studying how to leverage state-of-the-art AI advancements in the field of computer vision to develop applications with a practical use in day-to-day workflows in stroke treatment and other neurovascular diseases. For example, I want to study how we can use foundation models in 3D imaging to unlock novel applications with a real impact on stroke care. My main expertise has resided in understanding how complex vascular anatomies impact endovascular treatment in stroke.

LAB AFFILIATIONS

- Jeremy Heit, Heit's Lab (3/24/2025)

Publications

PUBLICATIONS

- **AI-derived Carotid Elongation Ratio may predict procedural delay but offer limited prognostic utility in mechanical thrombectomy.** *AJNR. American journal of neuroradiology*
  Ognard, J., Canals, P., Li, J., Bayraktar, E. A., El Hajj, G., Rodrigo-Gisbert, M., Mayol, J., Kadirvel, R., Brinjikji, W., Ribó, M., Kallmes, D. F.
  2026
- **Prognostic value of intracranial vascular tortuosity in thrombectomy for distal vessel occlusion.** *European stroke journal*
  Canals, P., García-Tornel, A., Fiore, G. M., Rodrigo-Gisbert, M., Sastre, B., Mayol, J., Ribo, M.
  2026; 11 (1)
- **Feasibility of an AI-assisted transcranial duplex sonography protocol for early detection of intracerebral haemorrhage: the HYPER-AI-SCAN single-centre prospective study.** *BMJ open*
  Simonetti, R., Canals, P., Gonzalez Riveros, J. D., Alanís-Bernal, M., Pancorbo, O., Rodriguez-Luna, D.
  2025; 15 (11): e102903
- **Validation of an in vitro testing platform for intra-arterial thrombolytics on human thrombectomy retrieved clots** *JOURNAL OF NEUROINTERVENTIONAL SURGERY*
  Cendrero, J., Li, J., Serodio, M., Marquez, C., Garcia-Tornel, A., Juega, J., Meza, C., Ortega-Gutierrez, S., Tiberi, R., Arevalo, A., Canals, P., Bonura, A., Pagola, et al
  2025
- **Association of initial core volume on non-contrast CT using a deep learning algorithm with clinical outcomes in acute ischemic stroke: a potential tool for selection and prognosis?** *Journal of neurointerventional surgery*
  Flores, A., Ustrell, X., Seró, L., Suarez, A., Avivar, Y., Cruz-Criollo, L., Galecio-Castillo, M., Cespedes, J., Cendrero, J., Salvia, V., Garcia-Tornel, A., Olive Gadea, M., Canals, et al
  2025
- **Prognostic value of intracranial vascular tortuosity in thrombectomy for distal vessel occlusion.** *European stroke journal*
  Canals, P., García-Tornel, A., Fiore, G. M., Rodrigo-Gisbert, M., Sastre, B., Mayol, J., González Riveros, J. D., Ribo, M.
  2025: 23969873251350124

- **Deep learning-based model for difficult transfemoral access prediction compared with human assessment in stroke thrombectomy.** *Journal of neurointerventional surgery*
  Canals, P., Garcia-Tornel, A., Requena, M., Jabłońska, M., Li, J., Balocco, S., Díaz, O., Tomasello, A., Ribo, M.
  2025
- **Impact on collateral flow of devices used for endovascular treatment of stroke: an in-vitro flow model.** *Journal of neurointerventional surgery*
  Requena, M., Li, J., Tiberi, R., Canals, P., Olive Gadea, M., de Dios Lascuevas, M., Jabłońska, M., Cendrero, J., Garcia-Tornel, A., Tomasello, A., Ribo, M.
  2024; 16 (10): 1042-1045
- **Double stent-retriever as the first-line approach in mechanical thrombectomy: a randomized in vitro evaluation.** *Journal of neurointerventional surgery*
  Li, J., Tiberi, R., Canals, P., Vargas, D., Castaño, O., Molina, M., Tomasello, A., Ribo, M.
  2023; 15 (12): 1224-1228
- **Partial (SAVE) versus Complete (Solumbra) Stent Retriever Retraction Technique for Mechanical Thrombectomy: A Randomized In Vitro Study.** *AJNR. American journal of neuroradiology*
  Jablonska, M., Li, J., Tiberi, R., Canals, P., Ortega, S., Tomasello, A., Ribo, M.
  2023; 44 (10): 1165-1170
- **Trackability of distal access catheters: an in vitro quantitative evaluation of navigation strategies.** *Journal of neurointerventional surgery*
  Li, J., Tomasello, A., Requena, M., Canals, P., Tiberi, R., Galve, I., Engel, E., Kallmes, D. F., Castaño, O., Ribo, M.
  2023; 15 (5): 496-501
- **A fully automatic method for vascular tortuosity feature extraction in the supra-aortic region: unraveling possibilities in stroke treatment planning.** *Computerized medical imaging and graphics : the official journal of the Computerized Medical Imaging Society*
  Canals, P., Balocco, S., Díaz, O., Li, J., García-Tornel, A., Tomasello, A., Olivé-Gadea, M., Ribó, M.
  2023; 104: 102170
- **A population synthesis fitting of the Gaia resolved white dwarf binary population within 100 pc** *MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY*
  Torres, S., Canals, P., Jimenez-Esteban, F. M., Rebassa-Mansergas, A., Solano, E.
  2022; 511 (4): 5462-5474
- **Catheter tip distensibility substantially influences the aspiration force of thrombectomy devices.** *Journal of neurointerventional surgery*
  Li, J., Castaño, O., Tomasello, A., de Dios Lascuevas, M., Canals, P., Engel, E., Ribo, M.
  2022; 14 (1)
- **The effects of unresolved double degenerates in the white dwarf luminosity function** *MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY*
  Rebassa-Mansergas, A., Toonen, S., Torres, S., Canals, P.
  2020; 491 (4): 5671-5681
- **Oxygen-neon-rich merger during common envelope evolution** *MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY*
  Canals, P., Torres, S., Soker, N.
  2018; 480 (4): 4519-4525