Resource Summary Report

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Vascular Modeling Toolkit

RRID:SCR_001893
Type: Tool

Proper Citation

Vascular Modeling Toolkit (RRID:SCR_001893)

Resource Information

URL: http://www.vmtk.org/

Proper Citation: Vascular Modeling Toolkit (RRID:SCR_001893)

Description: Software collection of libraries and tools for 3D reconstruction, geometric analysis, mesh generation and surface data analysis for image-based modeling of blood vessels.

Abbreviations: vmtk

Synonyms: vmtk - the Vascular Modeling Toolkit

Resource Type: software toolkit, software application, software resource

Defining Citation: PMID:19002516, PMID:19447701, DOI:10.1109/TMI.2009.2021652

Keywords: 3d reconstruction, geometric analysis, mesh generation, surface data analysis, image-based modeling, blood vessel, reconstruction, 3d

Funding:

Resource Name: Vascular Modeling Toolkit

Resource ID: SCR_001893

Alternate IDs: nlx_155869, OMICS_13947

Alternate URLs: https://sources.debian.org/src/vmtk/

Record Creation Time: 20220129T080210+0000

Record Last Update: 20250412T054639+0000

Ratings and Alerts

No rating or validation information has been found for Vascular Modeling Toolkit.

No alerts have been found for Vascular Modeling Toolkit.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 74 mentions in open access literature.

Listed below are recent publications. The full list is available at FDI Lab - SciCrunch.org.

Chen KW, et al. (2025) Usefulness of preprocedural 3-dimensional computed tomography planning in assisting one-stage pulmonary veins isolation with concomitant left atrial appendage occlusion procedure: A pilot study. International journal of cardiology. Heart & vasculature, 56, 101594.

Renzi F, et al. (2025) Accurate Reconstruction of Right Heart Shape and Motion From Cine-MRI for Image-Driven Computational Hemodynamics. International journal for numerical methods in biomedical engineering, 41(1), e3891.

Jiang J, et al. (2025) Improving rupture status prediction for intracranial aneurysms using wall shear stress informatics. Acta neurochirurgica, 167(1), 15.

Sánchez-Posada J, et al. (2025) morphoHeart: A quantitative tool for integrated 3D morphometric analyses of heart and ECM during embryonic development. PLoS biology, 23(1), e3002995.

Bartolo MA, et al. (2024) Computational framework for the generation of one-dimensional vascular models accounting for uncertainty in networks extracted from medical images. ArXiv.

Green L, et al. (2024) Myocardial biomechanical effects of fetal aortic valvuloplasty. Biomechanics and modeling in mechanobiology, 23(5), 1433.

Song M, et al. (2024) Intracranial aneurysm CTA images and 3D models dataset with clinical morphological and hemodynamic data. Scientific data, 11(1), 1213.

Domanin DA, et al. (2024) Persistence diagrams for exploring the shape variability of abdominal aortic aneurysms. Scientific reports, 14(1), 28132.

HashemizadehKolowri S, et al. (2024) Efficient and Accurate 3D Thickness Measurement in Vessel Wall Imaging: Overcoming Limitations of 2D Approaches Using the Laplacian Method. Journal of cardiovascular development and disease, 11(8).

Lee JV, et al. (2024) Validating a Curvature-Based Marker of Cervical Carotid Tortuosity for Risk Assessment in Heritable Aortopathies. Journal of the American Heart Association, 13(13), e035171.

Derwich W, et al. (2024) Correlation of four-dimensional ultrasound strain analysis with computed tomography angiography wall stress simulations in abdominal aortic aneurysms. JVS-vascular science, 5, 100199.

Zheng Y, et al. (2023) Effects of myocardial sheetlet sliding on left ventricular function. Biomechanics and modeling in mechanobiology, 22(4), 1313.

Rezaeitaleshmahalleh M, et al. (2023) Characterization of small abdominal aortic aneurysms' growth status using spatial pattern analysis of aneurismal hemodynamics. Scientific reports, 13(1), 13832.

Gharleghi R, et al. (2023) Annotated computed tomography coronary angiogram images and associated data of normal and diseased arteries. Scientific data, 10(1), 128.

Wong HS, et al. (2023) Fluid Mechanical Effects of Fetal Aortic Valvuloplasty for Cases of Critical Aortic Stenosis with Evolving Hypoplastic Left Heart Syndrome. Annals of biomedical engineering, 51(7), 1485.

Sturla F, et al. (2023) Fast Approximate Quantification of Endovascular Stent Graft Displacement Forces in the Bovine Aortic Arch Variant. Journal of endovascular therapy : an official journal of the International Society of Endovascular Specialists, 30(5), 756.

Hegner A, et al. (2023) Using averaged models from 4D ultrasound strain imaging allows to significantly differentiate local wall strains in calcified regions of abdominal aortic aneurysms. Biomechanics and modeling in mechanobiology, 22(5), 1709.

Baltazar S, et al. (2023) Effects of endothelial nitric oxide synthase on mouse arteriovenous fistula hemodynamics. Scientific reports, 13(1), 22786.

Bennati L, et al. (2023) An Image-Based Computational Fluid Dynamics Study of Mitral Regurgitation in Presence of Prolapse. Cardiovascular engineering and technology, 14(3), 457.

Takiyama T, et al. (2022) A maternal high-fat diet induces fetal origins of NASH-HCC in mice. Scientific reports, 12(1), 13136.