Resource Summary Report

Generated by NIF on Aug 28, 2026

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 application, software resource, software toolkit

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

Availability: Free, Available for download, Freely available

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: 20260821T193631+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 99 mentions in open access literature.

Listed below are recent publications. The full list is available at NIF .

Lagunas AC, et al. (2026) Factors Affecting Anal Sphincter Recruitment During Intraoperative Pudendal Nerve Stimulation: An Observational Study. International urogynecology journal, 37(1), 175.

Liu L, et al. (2026) Associations Between Hemodynamics, Shape and Atherosclerosis in M1 of Middle Cerebral Artery: Insights From 4-Dimensional Flow Magnetic Resonance Imaging in Patients With Ischemic Stroke. Journal of the American Heart Association, 15(4), e044697.

Lee CM, et al. (2025) Physiologic model of the cerebrovascular system using supply and demand between arteries and tissues. Scientific reports, 15(1), 27785.

Gottfried Minkenberg J, et al. (2025) Accurate full-scale patient-specific Circle of Willis models including aneurysms: A novel manufacturing approach. PloS one, 20(7), e0328300.

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.

Zhang H, et al. (2025) Prediction and SHAP Analysis Integrating Morphological and Hemodynamic Parameters for Unruptured Intracranial Aneurysm Occlusion After Flow Diverter Treatment. CNS neuroscience & therapeutics, 31(4), e70386.

Jiang P, et al. (2025) Hemodynamics of distal cerebral arteries are associated with functional outcomes in symptomatic ischemic stroke in middle cerebral artery territory: A four-dimensional flow cardiovascular magnetic resonance study. Journal of cardiovascular magnetic resonance : official journal of the Society for Cardiovascular Magnetic Resonance, 27(1), 101857.

Lyu Z, et al. (2025) Hemodynamic analysis of thrombosed intracranial aneurysms: a comparative correlation study. Neurosurgical review, 48(1), 417.

S??nchez-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.

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

Lyu Z, et al. (2025) Correlations between hemodynamics and radiomic features in thrombosed intracranial aneurysms. Neuroradiology, 67(9), 2447.

Robbi E, et al. (2025) Automatic CTA analysis for blood vessels and aneurysm features extraction in EVAR planning. Scientific reports, 15(1), 16431.

Hou L, et al. (2025) Semicircular canal morphology in Rodentia and its relationship to locomotion. Journal of anatomy, 247(5), 953.

Sokolow R, et al. (2025) Reduced order computational fluid dynamic simulations in the thoracic aorta are associated with disease recorded in a medical biobank. Scientific reports, 15(1), 39203.

Piersanti R, et al. (2025) Defining myocardial fiber bundle architecture in atrial digital twins. Computers in biology and medicine, 188, 109774.

Swiatek VM, et al. (2025) Predictive modeling and machine learning show poor performance of clinical, morphological, and hemodynamic parameters for small intracranial aneurysm rupture. Scientific reports, 15(1), 24051.

Tamada D, et al. (2025) Artifact-robust Deep Learning-based Segmentation of 3D Phase-contrast MR Angiography: A Novel Data Augmentation Approach. Magnetic resonance in medical sciences : MRMS : an official journal of Japan Society of Magnetic Resonance in Medicine, 24(4).

Thompson EW, et al. (2025) Pulmonary Artery Shear Stress and Oscillatory Shear Index are Associated with Right Ventricular Remodeling in Repaired Tetralogy of Fallot. Annals of biomedical engineering, 53(9), 2206.

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.