

Resource Summary Report

Generated by [kravitz2](#) on Sep 5, 2026

Warp

RRID:SCR_018071

Type: Tool

Proper Citation

Warp (RRID:SCR_018071)

Resource Information

URL: <https://github.com/cramerlab/warp>

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Description: Software tool that automates all preprocessing steps of cryo-EM data acquisition and enables real-time evaluation. Corrects micrographs for global and local motion, estimates local defocus and monitors key parameters for each recorded micrograph or tomographic tilt series in real time. Software includes deep-learning-based models for accurate particle picking and image denoising.

Resource Type: data acquisition software, data analysis software, data processing software, software application, software resource

Defining Citation: [DOI:10.1038/s41592-019-0580-y](https://doi.org/10.1038/s41592-019-0580-y)

Keywords: Automating preprocessing step, cryo EM data acquisition, micrograph correction, particle picking, image denoising, bio.tools

Availability: Free, Available for download, Freely available

Resource Name: Warp

Resource ID: SCR_018071

Alternate IDs: BioTools:Warp, biotools:Warp

Alternate URLs: <https://bio.tools/Warp>, <https://bio.tools/Warp>, <https://bio.tools/Warp>

License: GNU General Public License v3.0

Record Creation Time: 20220129T080338+0000

Record Last Update: 20260903T235447+0000

Ratings and Alerts

No rating or validation information has been found for Warp.

No alerts have been found for Warp.

Data and Source Information

Source: [SciCrunch Registry](#)

Usage and Citation Metrics

We found 10 mentions in open access literature.

Listed below are recent publications. The full list is available at [kravitz2](#) .

Karasmanis EP, et al. (2026) The molecular architecture of tunneling nanotubes. bioRxiv : the preprint server for biology.

Do TT, et al. (2026) A correlative workflow for synaptic imaging by cryo-electron tomography. Structure (London, England : 1993), 34(5), 839.

Morgan CJ, et al. (2026) The phage nucleus synergizes with an anti-defense protein to resist bacterial immunity. Cell reports, 45(4), 117219.

Chen S, et al. (2025) Cryo-electron tomography reveals the microtubule-bound form of inactive LRRK2. eLife, 13.

Mohan HM, et al. (2025) Endogenous retrovirus-like proteins recruit UBQLN2 to stress granules and shape their functional biology. Science advances, 11(29), eadu6354.

Chen S, et al. (2024) Cryo-electron tomography reveals the microtubule-bound form of inactive LRRK2. bioRxiv : the preprint server for biology.

Kong WW, et al. (2024) Cryo-electron tomography reveals the packaging pattern of RuBisCOs in Synechococcus ?-carboxysome. Structure (London, England : 1993), 32(8), 1110.

Tegunov D, et al. (2021) Multi-particle cryo-EM refinement with M visualizes ribosome-antibiotic complex at 3.5 Å in cells. Nature methods, 18(2), 186.

Walls AC, et al. (2020) Structure, Function, and Antigenicity of the SARS-CoV-2 Spike Glycoprotein. Cell, 181(2), 281.

Tegunov D, et al. (2019) Real-time cryo-electron microscopy data preprocessing with Warp. Nature methods, 16(11), 1146.