

<https://www.nist.gov/services-resources/software/nfiq-2>



SOFTWARE (<https://www.nist.gov/services-resources/software>).

NFIQ 2

Version

2.2.0

Type of Software

Biometric fingerprint quality assessment

Last Updated

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- Secunet (<https://www.secunet.com/>).
- GitHub Contributors (<https://github.com/usnistgov/NFIQ2/graphs/contributors>).

About

NIST Fingerprint Image Quality (NFIQ) 2 is open source software that links image quality of optical and ink 500 PPI fingerprints to operational recognition

performance. This allows quality values to be tightly defined and then numerically calibrated, which in turn allows for the standardization needed to support a worldwide deployment of fingerprint sensors with universally interpretable image qualities. NFIQ 2 quality features are formally standardized as part of [ISO/IEC 29794-4](http://www.iso.org/iso/catalogue_detail.htm?csnumber=62791) (http://www.iso.org/iso/catalogue_detail.htm?csnumber=62791) and serve as the reference implementation of the standard.

Source code

Development of NFIQ 2 occurs on [the official NFIQ 2 GitHub](https://github.com/usnistgov/NFIQ2) (<https://github.com/usnistgov/NFIQ2>).

Downloads

Installers for major releases are available on [the Releases tab of the official NFIQ 2 GitHub](https://github.com/usnistgov/NFIQ2/releases) (<https://github.com/usnistgov/NFIQ2/releases>). These downloads include a command-line interface for a variety of platforms, as well as development files for third-party integrators.

Presentations/Reports

- **12 January 2022:** *ISO/IEC 29794-4 Implementation: Updates and Weaknesses* (<https://www.nist.gov/document/nfiq-22-update-and-weaknesses>)
 - Presentation to ISO/IEC JTC1/SC 37/WG 3 on the release of NFIQ 2.2.
- **12 July 2021:** *NIST Interagency Report 8382: NFIQ 2 Report* (<https://www.nist.gov/publications/nist-fingerprint-image-quality-2>)
- **15 June 2021:** *Workshop on Fingerprint Image Quality (NFIQ 2.1)* (<https://eab.org/events/program/248>)
 - Two days of presentations and videos about NFIQ 2 at this website.
- **26 March 2014:** *NISTIR 7973: Towards NFIQ II Lite, Self Organizing Maps for Fingerprint Image Quality Assessment* (<https://www.nist.gov/publications/towards-nfiq-ii-lite-self-organizing-maps-fingerprint-image-quality-assessment>)
- **01-04 April 2014:** *IBPC 2014* (<https://www.nist.gov/itl/iad/image-group/ibpc-2014-presentations>)
 - Oliver Bausinger (BSI): *NFIQ 2.0 Adoption and use-cases: in EU:e-passport, EU-VIS and U.S* (https://www.nist.gov/document/03tuesdaybausinger20140328bausingernfiq2ousecase_sibpc2014pdf).

- Martin Olsen and Christoph Busch (Hochschule Darmstadt): Standardization :: ISO/IEC 29794-4 mapping NFIQ 2.0 quality components to impairments (<https://www.nist.gov/document/02tuesdayolsen20140401olsenmartinqualityfeaturesnfiq2flagspdf>).
- Michael Schwaiger (Secunet) + Elham Tabassi (NIST) NFIQ 2.0 open source: Operational release + Development kit (<https://www.nist.gov/document/04tuesdayschwaigernfiq2-operational-developmentpdf>).
- Elham Tabassi (NIST): NFIQ 2.0::Design, implementation, and performance evaluation (<https://www.nist.gov/document/nfiqslidesibpcfinalpdf>).
- **17 September 2013:** NFIQ 2 Core Technical Specification (<https://www.nist.gov/document/nfiq2slidesbcc2013tabassifinalpdf>), presented at the 2013 Biometrics Consortium Conference in Tampa, Florida (17–19 Sept 2013).
- **26 April 2013:** NFIQ 2 Workshop (2013) (<https://www.nist.gov/itl/iad/image-group/nfiq-2-workshop-2013>).
- **05 June 2012:** Version 0.5 of the NFIQ2 Feature Definitions Document (<https://www.nist.gov/document/nfiq-2qualityfeaturedefin-ver05pdf>).
- **05 March 2012:** NFIQ 2 Workshop (2012) (<https://www.nist.gov/itl/iad/image-group/nfiq-2-workshop-2012>).
- **25 February 2010:** Initial call for participation (<https://www.nist.gov/document/nfiq2callforparticipationvoopdf-o>) for NFIQ 2 development.

Related Publications

NIST Fingerprint Image Quality 2 (<https://www.nist.gov/publications/nist-fingerprint-image-quality-2>)

Information technology (<https://www.nist.gov/topic-terms/information-technology>) and Biometrics (<https://www.nist.gov/topic-terms/biometrics>).

System/Platform Requirements

NIST supplies installers for:

- Windows 10 (32/64-bit)
- macOS 10.15 (Intel)
- macOS 12 (Intel, M1)
- Ubuntu 20.04 LTS
- Red Hat Enterprise Linux/CentOS 7 (64-bit)

- Red Hat Enterprise Linux/CentOS 8 (64-bit)
- Raspberry Pi OS 2021 (32-bit)

Licensing Information

Public domain license (<https://github.com/usnistgov/NFIQ2/blob/master/LICENSE.md>)

Download Information

<https://github.com/usnistgov/NFIQ2/releases>

(<https://github.com/usnistgov/NFIQ2/releases>).

Documentation/User Guide

API documentation (<https://pages.nist.gov/NFIQ2/docs/git-master/>) for NFIQ 2 is available on [the official NFIQ 2 GitHub](https://github.com/usnistgov/NFIQ2) (<https://github.com/usnistgov/NFIQ2>). Details about the technical implementation of NFIQ 2 can be found in the [NFIQ 2 Report](https://doi.org/10.6028/NIST.IR.8382) (<https://doi.org/10.6028/NIST.IR.8382>) as well as [ISO/IEC 29794-4](http://www.iso.org/iso/catalogue_detail.htm?csnumber=62791) (http://www.iso.org/iso/catalogue_detail.htm?csnumber=62791).

References/Credits/Disclaimers

NFIQ 2 employs [FingerJet FX OSE](https://github.com/FingerJetFXOSE/FingerJetFXOSE) (<https://github.com/FingerJetFXOSE/FingerJetFXOSE>) under the terms of version 3 of the [GNU Lesser General Public License](https://www.gnu.org/licenses/lgpl-3.0.en.html) (<https://www.gnu.org/licenses/lgpl-3.0.en.html>), [OpenCV](https://github.com/opencv/opencv) (<https://github.com/opencv/opencv>) under the terms of version 2 of the [Apache license](https://www.apache.org/licenses/LICENSE-2.0.html) (<https://www.apache.org/licenses/LICENSE-2.0.html>), and [Biometric Evaluation](https://github.com/usnistgov/libbiomeval) (<https://github.com/usnistgov/libbiomeval>), [digestpp](https://github.com/kerukuro/digestpp) (<https://github.com/kerukuro/digestpp>), and [NFIR](https://github.com/usnistgov/nfir) (<https://github.com/usnistgov/nfir>) under a public domain license.

Related Project

[Biometric Quality](https://www.nist.gov/programs-projects/biometric-quality) (<https://www.nist.gov/programs-projects/biometric-quality>).

Contact

NFIQ 2 POC

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