FRANK BREITINGER (PHD)

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EDUCATION

PhD - Computer Sciences March 2011 - June 2014
Technical University Darmstadt

· Emphasis on Cyber Forensics and Cybersecurity.
· Member of da/sec - biometrics and internet-security research group.
· Member of Center for Advanced Security Research Darmstadt (CASED).

MSc. - Computer Sciences March 2009 - February 2011
University of Applied Sciences Darmstadt

· Emphasis on Cyber Forensics and Cybersecurity.

BSc. - Computer Sciences October 2005 - February 2009
University of Applied Sciences Mannheim

· Emphasis on Software Development.
· Practical semester at the University of Maryland (USA). Sept. 2007 to Mar. 2008.
· Thesis at sobedi GmbH Mannheim with a focus on software development. Aug. 2008 to Feb. 2009.

WORK EXPERIENCE

University of New Haven September 2014 - present
Assistant Professor (Tenure Track) *West Haven, CT*

· Teaching multiple course in Cybersecurity and Cyber Forensics.
· Co-Director of the Cyber Forensics Research and Education Laboratory.
· Applying to various research funding agencies.

University of Applied Sciences Darmstadt March 2011 - March 2014
Research Assistant *Darmstadt, Germany*

· Cybersecurity and Cyber Forensics.
· Sponsored by the FIDELITY Grant - Working on the indexing problem of similarity digests (a.k.a. fingerprints) for the European passport.
· Developed the Standard for Approximate matching at the National Institute of Standards and Technology (NIST) (Gaithersburg, MD, USA). Oct. 2013 to Dec. 2013.

IT-fuer-jedermann.de September 2009 - August 2014
Self-Employed *Beerfelden, Germany*

· Webdesign, Internet/Network, Consultation, Education and Sale.
· Designed an implemented several web pages based on Wordpress and PHP.
· Maintenance of the IT-Infrastructure for companies.

DEVELOPMENT AND OTHER ACTIVITIES*

1. 2017: **Research Fellowship** (two weeks) at Brno university of technology with the NES@FIT - Networked and embedded systems research group. Supported researchers on various projects as well as gave presentations.

2. 2017: Helped organizing the **National Workshop on Redefining Cyber Forensics** (NWRCF, two days) in Hartford (CT) which was NSF sponsored. A blue-ribbon panel to stimulate the needed intellectual exchange of ideas and discussions on the future of cyber forensics.

3. 2016. **Master Teacher Seminar** (two days) with Dr. Harvey Brightman, sponsored by the College of Business at the University of New Haven.

4. 2016. **KEEN ICE Workshop** (three days) featuring activities and presentations covering the important aspects of Entrepreneurially Minded Learning (EML), Active and Collaborative Learning (ACL), and Problem/Project Based Learning (PBL) and how to integrate them into your own courses. Details here.

*Some selected activities.

AWARDS & HONORS

1. 2017: University Research Scholar – (URS receive a partial teaching workload release for 3 academic years + a modest budget).

2. 2016: Merit Award – University of New Haven (in recognition of individual strong performance, and support of students in experiential education opportunities, as well as to acknowledge the overall contribution).

3. 2015: FBTI Award of Excellence – Fachbereichstag Informatik for my dissertation in Computer Science at a German Universities of Applied Science.

4. 2015: Best Paper award for the paper: How Cuckoo Filter Can Improve Existing Approximate Matching Techniques at the International Conference on Digital Forensics and Cyber Crime, Seoul, Korea.

5. 2015: Siew-Sngiem Best Poster Award: Towards Bloom Filter-based Indexing of Iris Biometric Data at the International Conference on Biometrics, Phuket, Thailand.

6. 2014: Best paper award for the paper: File Detection On Network Traffic Using Approximate Matching at the International Conference on Digital Forensics and Cyber Crime, New Haven, CT.

7. 2013: Best paper award for the paper: Evaluating Detection Error Trade-offs for Bytewise Approximate Matching Algorithms at the International Conference on Digital Forensics and Cyber Crime, Moscow, Russia.

FUNDING

1. 2017: Source: University of New Haven, Title: Availability of Datasets for digital forensics - and what is missing, PI: Frank Breitinger, Amount: $3,250 – funded.

2. 2017: Source NSA / NSF, Title: University of New Havens Cyber Agent Academy, PI: Ibrahim Baggili, Co-PIs: Frank Breitinger, Liberty Page, Amount: $53,000 – funded.

3. 2016: Source: NSF, Title: National Workshop on Redefining Cyber Forensics (NWRCF), PI: Ibrahim Baggili, Co-PI: Frank Breitinger, Amount: $49,995 – funded.

4. 2016: Source: University of New Haven, Title: A survey to enhance adult education in cyber security, PI: Frank Breitinger, Amount: $3,250 – funded.

5. 2014: Source: Purdue University sub-award through Department of Homeland Security, Title: Artifact Genome Project, PI: Ibrahim Baggili, Co-PIs: Frank Breitinger, Ted Markowitz, Amount: $140,000 – funded.

PUBLICATIONS & PRESENTATIONS

Books

1. Joshua I. James and Frank Breitinger, eds. *Digital Forensics and Cyber Crime - 7th International Conference, ICDF2C 2015, Seoul, South Korea, October 6-8, 2015, Revised Selected Papers*. Vol. 157. Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering. Springer, 2015. ISBN: 978-3-319-25511-8.

Book Chapters

1. Joseph Ricci, Ibrahim Baggili, and Frank Breitinger. "Watch What You Wear: Smartwatches and Sluggish Security". In: *Managing Security Issues and the Hidden Dangers of Wearable Technologies*. Ed. by Andrew Marrington, Don Kerr, and John Gammack. IGI Global, 2016, p. 47.

Journal Articles

1. Devon Clark, Christopher Meffert, Ibrahim Baggili, and Frank Breitinger. "DROP (DRone Open source Parser) your drone: Forensic analysis of the DJI Phantom III". *Digital Investigation* (2017). Accepted (to appear).
2. George Denton, Filip Karpisek, Frank Breitinger, and Ibrahim Baggili. "Leveraging the SRTP protocol for over-the-network memory acquisition of a GE Fanuc Series 90-30". *Digital Investigation* (2017). Accepted (to appear).
3. Cinthya G. Mendez, Frank Breitinger, and Ibrahim Baggili. "Availability of Datasets for digital forensics - and what is missing". *Digital Investigation* (2017). Accepted (to appear).
4. Jason Moore, Ibrahim Baggili, and Frank Breitinger. "Find Me If You Can: Mobile GPS Mapping Applications Forensics Analysis & SNAVP The Open Source, Modular, Extensible Parser". *Journal of Digital Forensics, Security and Law (JDFSL)* 12.1 (2017), p. 7.
5. Samer Al-khateeb, Kevin J. Conlan, Nitin Agarwal, Ibrahim Baggili, and Frank Breitinger. "Exploring Deviant Hacker Networks (DHN) On Social Media Platforms". *Journal of Digital Forensics, Security and Law* 11.2 (2016), pp. 7–20.
6. Vikram S. Harichandran, Frank Breitinger, and Ibrahim Baggili. "Bytewise Approximate Matching: The Good, The Bad, and The Unknown". *Journal of Digital Forensics, Security and Law* 11.2 (2016), pp. 59–78.
7. Vikram S. Harichandran, Frank Breitinger, Ibrahim Baggili, and Andrew Marrington. "A cyber forensics needs analysis survey: Revisiting the domain's needs a decade later". *Computers & Security* 57 (2016), pp. 1–13. ISSN: 0167-4048.
8. Vikram S. Harichandran, Daniel Walnycky, Ibrahim Baggili, and Frank Breitinger. "CuFA: A more formal definition for digital forensic artifacts". *Digital Investigation* 18 (2016), S125–S137.
9. Doowon Jeong, Frank Breitinger, Hari Kang, and Sangjin Lee. "Towards Syntactic Approximate Matching-A Pre-Processing Experiment". *The Journal of Digital Forensics, Security and Law: JDFSL* 11.2 (2016), pp. 97–110.
10. Conlan Kevin, Ibrahim Baggili, and Frank Breitinger. "Anti-forensics: Furthering digital forensic science through a new extended, granular taxonomy". *Digital Investigation* 18 (2016), S66–S75.
11. Christopher S Meffert, Ibrahim Baggili, and Frank Breitinger. "Deleting collected digital evidence by exploiting a widely adopted hardware write blocker". *Digital Investigation* 18 (2016), S87–S96.
12. Xiaolu Zhang, Frank Breitinger, and Ibrahim Baggili. "Rapid Android Parser for Investigating DEX files (RAPID)". *Digital Investigation* 17 (2016), pp. 28–39. ISSN: 1742-2876.

13. Filip Karpisek, Ibrahim Baggili, and Frank Breitinger. "WhatsApp network forensics: Decrypting and understanding the WhatsApp call signaling messages". *Digital Investigation* 15 (2015), pp. 110–118. ISSN: 1742-2876.

14. Daniel Walnycky, Ibrahim Baggili, Andrew Marrington, Jason Moore, and Frank Breitinger. "Network and device forensic analysis of Android social-messaging applications". *Digital Investigation* 14, Supplement 1 (2015). The Proceedings of the Fifteenth Annual DFRWS Conference, pp. 77–84. ISSN: 1742-2876.

15. Frank Breitinger and Ibrahim Baggili. "File Detection On Network Traffic Using Approximate Matching". *Journal of Digital Forensics, Security and Law (JDFSL)* 9.2 (2014), pp. 23–36.

16. Frank Breitinger, Harald Baier, and Douglas White. "On the database lookup problem of approximate matching". *Digital Investigation* 11, Supplement 1.0 (2014). Proceedings of the First Annual DFRWS Europe, S1–S9. ISSN: 1742-2876.

17. Frank Breitinger, Christian Rathgeb, and Harald Baier. "An Efficient Similarity Digests Database Lookup - A Logarithmic Divide & Conquer Approach". *Journal of Digital Forensics, Security and Law (JDFSL)* 9.2 (2014), pp. 155–166.

18. Frank Breitinger and Vassil Roussev. "Automated evaluation of approximate matching algorithms on real data". *Digital Investigation* 11, Supplement 1.0 (2014). Proceedings of the First Annual DFRWS Europe, S10 –S17. ISSN: 1742-2876.

19. Frank Breitinger, Georgios Stivaktakis, and Vassil Roussev. "Evaluating Detection Error Tradeoffs for Bytewise Approximate Matching Algorithms". *Digital Investigation* 11.2 (2014), pp. 81–89. ISSN: 1742-2876.

20. Christian Rathgeb, Frank Breitinger, Christoph Busch, and Harald Baier. "On application of bloom filters to iris biometrics". *Biometrics, IET* 3.4 (2014), pp. 207–218. ISSN: 2047-4938.

21. Frank Breitinger, Georgios Stivaktakis, and Harald Baier. "FRASH: A Framework to Test Algorithms of Similarity Hashing". *Digit. Investig.* 10 (2013), S50–S58. ISSN: 1742-2876.

Refereed Proceedings

1. Ibrahim Baggili and Frank Breitinger. "Data Sources for Advancing Cyber Forensics: What the Social World Has to Offer". In: *AAAI Spring Symposium Series*. 2015.

2. Ibrahim Baggili, Jeff Oduru, Kyle Anthony, Frank Breitinger, and Glenn McGee. "Watch What You Wear: Preliminary Forensic Analysis of Smart Watches". In: *Availability, Reliability and Security (ARES), 2015 10th International Conference on*. 2015, pp. 303–311.

3. Vikas Gupta and Frank Breitinger. "How Cuckoo Filter Can Improve Existing Approximate Matching Techniques". English. In: *Digital Forensics and Cyber Crime*. Ed. by JoshuaI. James and Frank Breitinger. Vol. 157. Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering. **Best Paper Award**. Springer International Publishing, 2015, pp. 39–52. ISBN: 978-3-319-25511-8.

4. Christian Rathgeb, Frank Breitinger, Harald Baier, and Christoph Busch. "Towards Bloom filter-based indexing of iris biometric data". In: *Biometrics (ICB), 2015 International Conference on*. **Siew-Sngiem Best Poster Award**. 2015, pp. 422–429.

5. Gurjar Satyendra, Ibrahim Baggili, Frank Breitinger, and Alice Fischer. "An empirical comparison of widely adopted hash functions in digital forensics: does the programming language and operating system make a difference?" In: *Proceedings of the Conference on Digital Forensics, Security and Law*. 2015, pp. 57–68.

6. Frank Breitinger, Christian Winter, York Yannikos, Tobias Fink, and Michael Seefried. "Using Approximate Matching to Reduce the Volume of Digital Data". English. In: *Advances in Digital Forensics X*. Ed. by Gilbert Peterson and Sujeet Shenoi. Vol. 433. IFIP Advances in Information and Communication Technology. Springer Berlin Heidelberg, 2014, pp. 149–163. ISBN: 978-3-662-44951-6.

7. Frank Breitinger, Georg Ziroff, Steffen Lange, and Harald Baier. "Similarity Hashing Based on Levenshtein Distances". English. In: *Advances in Digital Forensics X*. Ed. by Gilbert Peterson and Sujeet Shenoi. Vol. 433. IFIP Advances in Information and Communication Technology. Springer Berlin Heidelberg, 2014, pp. 133–147. ISBN: 978-3-662-44951-6.

8. Frank Breitinger et al. "Towards a Process Model for Hash Functions in Digital Forensics". English. In: *Digital Forensics and Cyber Crime*. Ed. by Pavel Gladyshev, Andrew Marrington, and Ibrahim Baggili. Vol. 132. Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering. Springer International Publishing, 2014, pp. 170–186. ISBN: 978-3-319-14288-3.

9. Frank Breitinger, Knut Astebøl, Harald Baier, and Christoph Busch. "mvHash-B - A New Approach for Similarity Preserving Hashing". In: *IT Security Incident Management and IT Forensics (IMF), 2013 Seventh International Conference on*. 2013, pp. 33–44.

10. Frank Breitinger and Harald Baier. "Similarity Preserving Hashing: Eligible Properties and a New Algorithm MRSH-v2". English. In: *Digital Forensics and Cyber Crime*. Ed. by Marcus Rogers and KathrynC. Seigfried-Spellar. Vol. 114. Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering. Springer Berlin Heidelberg, 2013, pp. 167–182. ISBN: 978-3-642-39890-2.

11. Frank Breitinger and Kaloyan Petrov. "Reducing the Time Required for Hashing Operations". English. In: *Advances in Digital Forensics IX*. Ed. by Gilbert Peterson and Sujeet Shenoi. Vol. 410. IFIP Advances in Information and Communication Technology. Springer Berlin Heidelberg, 2013, pp. 101–117. ISBN: 978-3-642-41147-2.

12. Christian Rathgeb, Frank Breitinger, and Christoph Busch. "Alignment-free cancelable iris biometric templates based on adaptive bloom filters". In: *Biometrics (ICB), 2013 International Conference on*. 2013, pp. 1–8.

13. Frank Breitinger and Harald Baier. "A fuzzy hashing approach based on random sequences and hamming distance". In: *Proceedings of the Conference on Digital Forensics, Security and Law*. 2012, pp. 89–100.

14. Frank Breitinger and Harald Baier. "Performance Issues About Context-Triggered Piecewise Hashing". English. In: *Digital Forensics and Cyber Crime*. Ed. by Pavel Gladyshev and MarcusK. Rogers. Vol. 88. Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering. Springer Berlin Heidelberg, 2012, pp. 141–155. ISBN: 978-3-642-35514-1.

15. Frank Breitinger and Harald Baier. "Properties of a similarity preserving hash function and their realization in sdhash". In: *Information Security for South Africa (ISSA)*. 2012, pp. 1–8.

16. Frank Breitinger, Harald Baier, and Jesse Beckingham. "Security and implementation analysis of the similarity digest sdhash". In: *First International Baltic Conference on Network Security & Forensics (NeSeFo)*. 2012.

17. Harald Baier and Frank Breitinger. "Security Aspects of Piecewise Hashing in Computer Forensics". In: *IT Security Incident Management and IT Forensics (IMF), 2011 Sixth International Conference on*. 2011, pp. 21–36.

18. Frank Breitinger and Claudia Nickel. "User Survey on Phone Security and Usage". In: *BIOSIG*. Ed. by Arslan Brömme and Christoph Busch. Vol. 164. LNI. GI, 2010, pp. 139–144. ISBN: 978-3-88579-258-1.

Other major Publications

1. Frank Breitinger. "On the utility of bytewise approximate matching in computer science with a special focus on digital forensics investigations". PhD thesis. Technical University Darmstadt, 2014.
2. Frank Breitinger, Barbara Guttman, Michael McCarrin, Vassil Roussev, and Douglas White. *Approximate Matching: Definition and Terminology*. Special Publication 800-168. National Institute of Standards and Technologies, 2014.
3. Frank Breitinger. "Security Aspects of fuzzy hashing". MA thesis. University of Applied Sciences Darmstadt, 2011.

Other Presentations

1. Frank Breitinger and Ibrahim Baggili. *Mixed topics including IoT, Drones, Similarity matching, mobile applications and PLCs*. Five Presentations at National Training on Crime Scene Management in cases of terrorism related offences, including the use of internet for terrorist purposes, cyber offences and digital evidence organized by **United Nations Office on Drugs and Crime (UNODC)**. 2017.
2. Frank Breitinger. *Reducing data for forensic investigations using approximate matching*. Presentation at University New Haven. February. 2014.
3. Frank Breitinger. *Similarity Preserving Hashing*. Presentation at 8. GI SIG SIDAR Graduate Workshop on Reactive Security (SPRING). 2013.
4. Barbara Guttman, Frank Breitinger, Simson Garfinkel, Jesse Kornblum, and Clay Shields. *Approximate Matching of Digital Artifacts*. Panel discussion at 13th Digital Forensics Research Conference (DFRWS13). 2013.
5. Frank Breitinger. *Similarity Preserving Hashing*. Presentation at CAST Workshop - Forensik und Internetkriminalitaet. 2012.
6. Frank Breitinger and Harald Baier. *Security Aspects of Piecewise Hashing in Computer Forensics*. Abstract and Presentation at 6. GI SIG SIDAR Graduate Workshop on Reactive Security (SPRING). 2011.

SERVICE

University Service

· 2016 - today: Member of the University of New Haven Faculty Senate.

Board Member

· 2014 - today: Journal of Digital Forensics, Security and Law (JDFSL).
· 2016 - today: Digital Investigation (DI).

General Co-Chair

· 2016: International Conference on Digital Forensics & Cyber Crime, Manhattan (NY), United States.

Technical Program Chair

· 2015: International Conference on Digital Forensics & Cyber Crime, Seoul, South Korea.
· 2014: International Conference on Digital Forensics & Cyber Crime, New Haven (CT), United States.

Program Committee Member

· 2015 - today: Conference on Digital Forensics, Security and Law (ADFSL).
· 2015 - today: International Conference on Availability, Reliability and (ARES) (Workshop WSDF).
· 2015 - today: Systematic Approaches to Digital Forensic Engineering (SADFE).
· 2014 - today: Digital Forensics Research Conference (DFRWS).
· 2014 - today: Digital Forensics Research Conference Europe (DFRWS EU).
· 2014 - today: International Conference on Digital Forensics (IFIP WG 11.9).
· 2013 - today: International Conference on Digital Forensics & Cyber Crime (ICDF2C).

Reviewer for Articles

· 2017: IEEE Transactions on Information Forensics and Security.
· 2017: Indian Journal of Science and Technology.
· 2017: Journal of Information Security and Applications.
· 2017: Information Systems.
· 2016: ACM Computing Surveys.
· 2015: Digital Investigation.
· 2015: Journal of Information Technology.

Mentoring Activities

· 2012 - today: Theses, undergrad & graduate projects and internships advisor.

TEACHING EXPERIENCES

University of New Haven

· Reverse Engineering (Android) (graduate & undergraduate).
· Ethical Hacking (graduate & undergraduate).
· Topics in Cyber Security and Forensics (graduate & undergraduate).
· Introduction to Computer Security (graduate & undergraduate).
· Software Project Analysis and Design (graduate & undergraduate).
· Object oriented Design and Analysis (graduate & undergraduate).
· Senior Software Project (undergraduate).

University of Applied Sciences Darmstadt

· Selected Topics of IT-Security (graduate).
· IT-security seminar on Internet Security and Similarity Hashing (graduate).
· Theory-Seminar about Aspects of Fuzzy Hashing* (graduate) - Teaching assistant.
· Cryptography* (graduate) - Teaching assistant.
· Computer Forensics* (graduate) - Teaching assistant.

*I am more than comfortable with the material and could teach these courses without a long preparation time.

Additional

· Writing a 'letter of study' for an online lecture *digital forensic*. 5 ECTS lecture for Master students including a practical (German).

STUDENTS ADVISING

Note, this section only lists theses but does not list any internships, senior design projects or independent studies.

Master thesis

- 2016: Vikram Harichandran - Approximate matching for Template detection (working title; expected in 12/2016).
- 2016: Lorenz Liebler - Approximate matching for malware detection in memory (working title; expected in 10/2016).
- 2015: Tobias Huppertz - Indexing similarity hashes using Bloom filters.
- 2013: Vikas Gupta - File fragment detection on network traffic using similarity hashing.
- 2013: Simon Thurner - Methods for identification of encryption data and its application in digital forensics.
- 2012: Tim Völpel - Forensic-Chatlog-Parser.
- 2012: Knut Petter Åstebøl - mvHash - a new approach for fuzzy hashing.
- 2012: Jesse Beckingham - Security analysis of sdhash.

Bachelor thesis

- 2012: Dario Cundari - Software tools for testing similarity preserving algorithms.
- 2012: Georg Ziroff - Approaches for similarity-preserving hashing.

MEDIA CONTRIBUTIONS

Note, this is not a complete list but some selected contributions.

Television

- WTNH - News8: Social Media Security: Beware the urge to over-share (Feb. 6, 2017).
- WTNH - News8: Study: Banks have weak password handling (Mar. 1, 2016).
- FOX-CT: FBI director: Apple encryption dispute hardest question seen in government (Feb. 25, 2016).
- CBS Chicago: Is Your Smartwatch Safe From Hackers? (Feb. 9, 2016).
- WTNH - News8: Facebook threat sends schools named 'Lincoln' on high alert, including Meriden (Jan. 26, 2016).
- WTNH - News8: Things you should NOT buy online (Dec. 16, 2015).
- WTNH - News8: How to protect your identity from being stolen this holiday season (Dec. 2, 2015).
- WTNH - News8: Experts reveal how ISIS is using the dark web to stay undetected (Nov. 19, 2015).
- Local10: Researchers on smartwatch concerns (Dec. 16, 2015).
- Local10: Watch what you wear: Smartwatches vulnerable to attack (Aug. 3, 205).
- FOX-CT: Thinking like 'bad guys to protect the interwebs (Jun. 30, 2015).

Internet / Magazines

- Hartford Courant: From Manchester Office, Digital Police Detectives Track Down Child-Porn Viewers (continued: Massachusetts Man Faces Glastonbury Voyeurism Charges (Oct. 13, 2016)).
- Bulletin of the Academy of Science and Engineering: Cybersecurity: Implications and Prevention What Can We Learn from the NIST Framework? (Sept. 1, 2016).
- Digital Guardian: Insider vs. Outsider Data Security Threats: Whats the Greater Risk? (Jul. 26, 2016).
- Company Dime: Sabres Silence On Security 'Incident' Isn't Unusual, But It's Still Making Travel Managers Nervous (Sept. 3, 2015).
- CNET: Samsung, LG smartwatches give up personal data to researchers (Jun. 10, 2015).

REFERENCES AVAILABLE TO CONTACT

Prof. Dr. Harald Baier

- Professor at Fachbereich Informatik at Hochschule Darmstadt.

· e-mail: Harald.Baier@h-da.de

Prof. Dr. Ibrahim (Abe) Baggili

· Assistant Dean at Tagliatela College of Engineering at the University of New Haven
· e-mail: IBaggili@newhaven.edu

Prof. Dr. Andrew Marrington

· Acting Dean and Associate Professor at the College of Information Technology at Zayed University
· e-mail: andrew.marrington@zu.ac.ae

Dr. Joshua James

· Consultant at United Nations Office on Drugs and Crime and Adjunct Professor Hallym University, South Korea
· e-mail: joshua@cybercrimetech.com

Barbara Guttman

· Chief of the Information Access Division at National Institute of Standards and Technology (NIST)
· e-mail: barbara.guttman@nist.gov

Douglas White

· Project manager for the National Software Reference Library (NRSL) at National Institute of Standards and Technology (NIST).
· e-mail: douglas.white@nist.gov

MORE INFORMATION

More information and auxiliary documents can be found at

· `http://www.FBreitinger.de`
· `https://www.linkedin.com/pub/frank-breitinger/87/65/496`
· `http://www.unhcfreg.com`