Gregory Fiumara

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Leader and meticulous self-starter whose analysis and code is trusted in operational identification systems worldwide.

Experience

National Institute of Standards and Technology (NIST) · *Computer Scientist · Gaithersburg, MD* 06/08–Present

- Proposed and lead focus area for biometrics in the Forensic Science Research Program under the Special Programs Office. Managed $1 200 000 yearly research portfolio advancing forensic science for practitioners.
- Served as editor of ISO/IEC 29794-4:202X and maintainer of its reference implementation, *NIST Fingerprint Image Quality (NFIQ) 2*, the C++ library used worldwide for fingerprint image quality calculations.
- Designed, implemented, and lead all aspects of Evaluation of Latent Friction Ridge Technology (ELFT), NIST's next-generation test of latent friction ridge template generation and identification.
- Co-author of the United States Government (USG)'s third revision of Personal Identity Verification (PIV), FIPS 201-3. Served as biometrics subject matter expert for the revision.
- Lead NIST's involvement in Intelligence Advanced Research Projects Activity (IARPA)'s Nail-to-Nail Challenge (N2N). Developed fingerprint capture software using various fingerprint device software development kits (SDKs), prepared institutional review board (IRB) protocols, designed C++ application programming interfaces (APIs) and wrote corresponding test drivers, performed data analysis in R and Python, presented results in public reports and conferences. Oversaw financial assistance awards. Assisted in interagency experiment design and communication with participants.
- Spearheaded public biometric data distribution initiative, *Special Database Series 300*. Lead team through human subjects protection, privacy, and legal reviews, presented at conferences, and developed a Python web app using Flask for managing distribution of hundreds of terabytes of industry-recognized biometric reference data yearly.
- Lead Minutia Exchange (MINEX), the world-recognized evaluation of interoperable minutiae template (ANSI/INCITS 378) generation and comparison, supporting certification for the USG's PIV program. Performed development, experiment design, data analysis, and report generation.
- Lead Proprietary Fingerprint Template (PFT), NIST's evaluation of 1:1 proprietary fingerprint template generation and comparison. Performed development, experiment design, data analysis, and report generation.
- Co-developed Biometric Evaluation Framework, a collection of POSIX-compliant C++ classes simplifying biometric technology evaluation test driver code for rapid results. Significant hierarchies include parallel processing, image/video/biometric format parsing, storage abstractions, safe memory management, and more. Project was recipient of a 2014 Department of Commerce Silver Award, and was presented at both BTAS 2015 and CppCon 2016.
- Co-authored API, test driver, and final report of FpVTE, NIST's distributed large-scale 1:*N* fingerprint evaluation.
- Served as mentor to college student trainees in software engineering and biometrics.
- Assisted in administration of Linux/Windows blade clusters, including software, networking, and storage.

Gregory Fiumara · *Sole Proprietor · Gaithersburg, MD* 01/10–Present

- Developed iOS apps. Most notably *Tappd That*, a well-reviewed Untappd client for Apple mobile devices.

Education

National Institute of Standards and Technology · Gaithersburg, MD 08/14–11/15
Foundations of Leadership Program and *Project Management Leadership Program* graduate.

Johns Hopkins University · Baltimore, MD 09/10–08/12
MS computer science, with honors. 4.0 GPA.

University of Maryland, Baltimore County: An Honors University · Baltimore, MD 08/06–12/09
BS computer science, cum laude. Certificate of general honors. Honors College graduate. 3.72 GPA.

Skills and Tools

Daily	macOS, Linux (CentOS/Red Hat, Ubuntu). `bash` & GNU utilities, C++, R (`tidyverse`/`ggplot2`). CMake. BBEdit, `vim`, Xcode. `clang`, `gcc`. `git`.
Monthly	Windows. C, LaTeX, Objective-C (UIKit/CocoaTouch), Python. Apache. Microsoft Visual Studio.
Occasionally	UNIX derivatives (FreeBSD). C# , Java, Swift, Ti*k*Z. Eclipse. `icc`. Perforce.