



New Digital Tool Redefines Photo Sleuthing

By KURT LUTHER

Exactly two years ago, in the Summer 2015 issue of *Military Images*, this column asserted, “A Civil War photo sleuth is only as good as his or her tools.” I suggested then that digital tools were uniquely powerful not only for giving us access to a growing wealth of photos and records to aid us in our research, but also a community of like-minded experts and enthusiasts to exchange information and support one another. We launched the Civil War Photo Sleuth page on Facebook, and have published a multitude of sleuthing stories submitted online. Building on these efforts, we are thrilled to use this column to announce CivilWarPhotoSleuth.com (CWPS), a website that brings together technology and community, creating an entirely new approach to researching Civil War portraits.

This website has been years in the making. It represents a wide-ranging collaboration between *Military Images* editor and publisher Ron Codding-

Face recognition software measures the ratios between landmarks detected on an unidentified face and finds the most similar ratios in a database of identified faces. The technology works on both modern photos and historical ones, like the soldiers pictured here.

ton, Virginia Center for Civil War Studies director Paul Quigley, and my students and me at Virginia Tech’s Department of Computer Science. We’re also guided by a stellar advisory board that includes Center for Civil War Photography President Bob Zeller, Civil War historian Matt Gallman of the University of Florida, and computer vision expert Devi Parikh, of Facebook and Georgia Tech.

CivilWarPhotoSleuth.com aims to bring Civil War photo enthusiasts together, and provide them access to cutting-edge technologies and customized resources to support their research. It does this in three interconnected ways: an online photo archive, research tools, and an online community.

Photo Archive

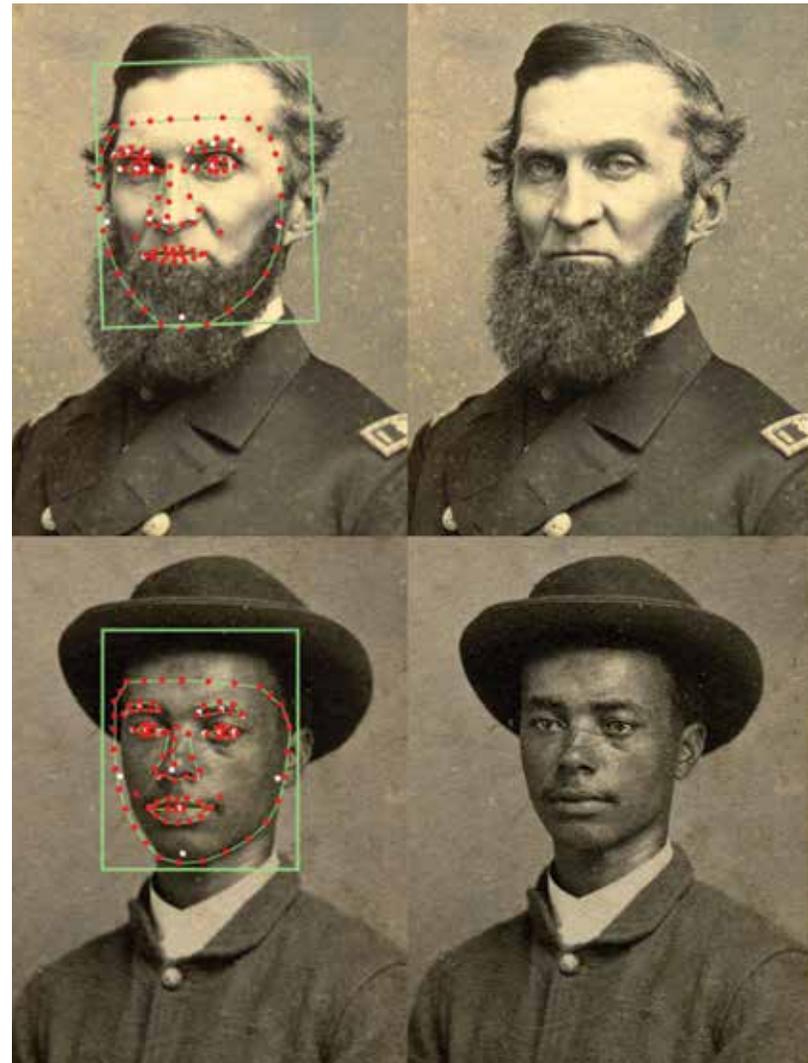
CWPS seeks to be the world’s most comprehensive online archive of Civil War-era portraits, including soldiers, sailors and civilians. CWPS will encourage owners of photos scattered across computers, websites, books and shops around the world to add scans to our archive, making them accessible and searchable in one centralized place. We are linking up with the Digital Public Library of America (DPLA), a network of hundreds of digital archives hosted by libraries, museums, and cultural institutions around the world, and we plan to add more.

Users will have fine-grained control over exactly how they want to share their photos. You can upload photos from your collection and keep the photos private, making them easier to search and organize. Posting a few for the public, on the other hand, will allow a user to offer them for sale, or share them with a trusted friend. In addition, you can share photos anonymously. It is as easy as flipping a switch.

Research Tools

Powerful research tools to aid users identify portraits of unknown soldiers will augment this online archive. To search a mystery photo, the user can upload the image to CWPS, and “tag” it with whatever clues are visible, including unit and rank insignia, photographer details, and inscriptions. State-of-the-art face recognition software will then detect the soldier’s face, analyzing dozens of unique reference points per face, and compare the points against tens of thousands of identified photos in our archive. Face recognition allows us to find matches even when the soldier’s facial hair changes, or if a different view of him is in our archive.

Filtering the user’s initial clues and service records through our reference photos will produce search results. For example, if a user tags first sergeant’s chevrons in a mystery photo, the search results will only include soldiers



who served as a first sergeant at some point during the war. The results will also be sorted by facial similarity to the mystery photo, so the most promising matches appear first. Our initial tests show that face recognition can truly find a needle in a haystack. In just a few seconds, we can identify a mystery photo of an unknown soldier among more than 15,000 possibilities.

Beyond face recognition, CWPS also takes advantage of the latest crowdsourcing techniques. Crowdsourcing involves dividing up complex work into small “micro-tasks” that can be completed online by many independent workers. Because automated facial recognition is still imperfect, we can complement the computer-generated results with crowdsourced human judgements. And, because not all Civil War photos will be in our archive, we can also employ crowdsourcing to search online for different or higher quality views of specific individuals. Upon completion of these micro-tasks,

the results are added to our database and instantly made available in future searches.

The above describes features that we’ve already built. But we have ambitious plans to add more. For instance, we’re excited about the potential of capturing photographer data, something historically hard to find, and using it to triangulate the identification of the photo’s subjects. We envision automatically grouping photos with the same painted backdrop, or identifying regiments associated with certain photographers and date ranges.

Online Community

Finally, CWPS will serve as an online community for Civil War photo enthusiasts. While technology remains a valuable tool, photo sleuthing ultimately involves a human process, requiring hard work and careful research from ourselves, and building on those who came before us. One of the greatest strengths of the site is that the more people use it, the more valuable it becomes. When you add an identified photo from your collection, it may instantly match a mystery photo that another user has been trying to identify for years. Likewise, if you search an unidentified photo and don’t find a match at first, you will be automatically notified if a potential matching photo appears on the site at any point in the future.

Beyond these indirect forms of collaboration, CWPS will also support more straightforward ways of working together, allowing people to ask questions, request help, provide information and make identifications. We recognize that many of these conversations already happen online, often quite successfully, and we seek to complement rather than compete. To that end, you can log into CWPS using your existing Facebook account, and your photos and comments will link to it. Our goal is to smoothly integrate CWPS with the existing constellation of social media groups, email lists, forums, blogs and in-person events that comprise the Civil War photography community.

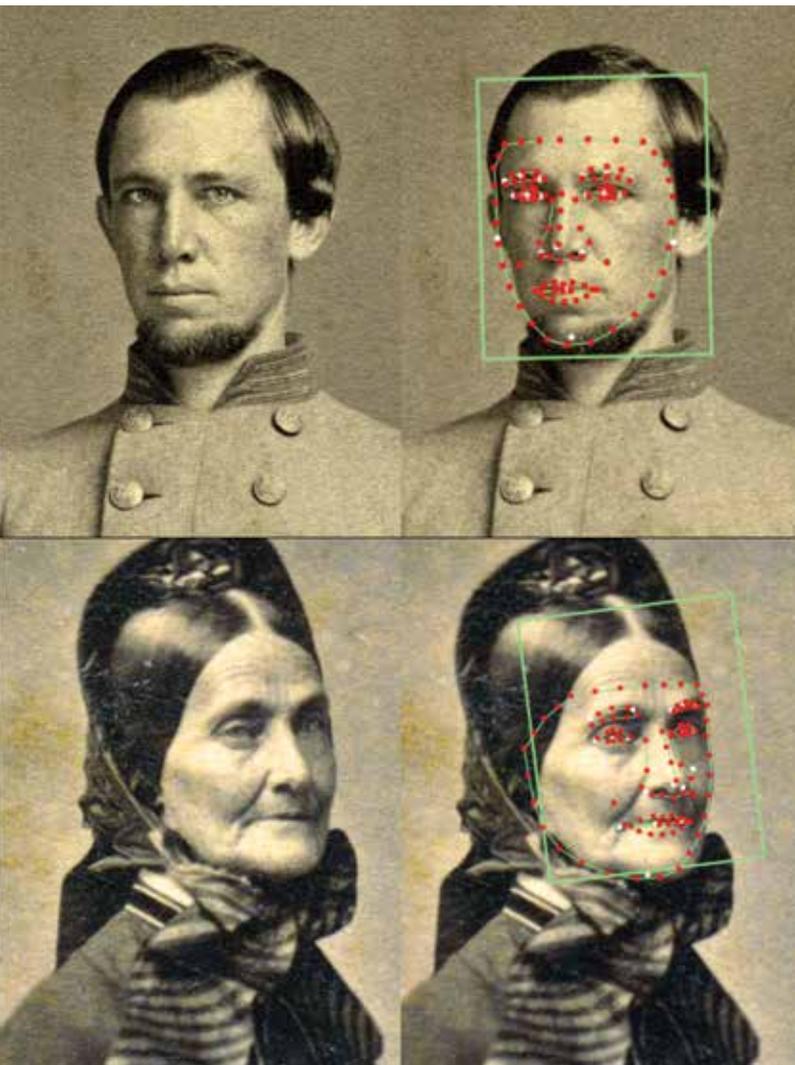
As a first step towards that goal, we are reaching out to *Military Images* readers to be our beta-testers, starting with this column. If you have an interest in trying out our software (for free) and providing feedback, please visit CivilWarPhotoSleuth.com and sign up. You’ll be given early access to the site and become among the first to learn about new features and fixes.

Additionally, we will debut a working version of the site at the Annual Civil War Collectors Show, hosted by the Gettysburg Battlefield Preservation Association, on June 24-25 in Gettysburg, PA. *Military Images* will have its usual booth there, and Ron Coddington and I will be on hand to scan your unknown Civil War photos and see if CWPS can identify them. We hope many of you will join us in starting this exciting new adventure in Civil War photo sleuthing.

*We encourage you to submit other photo mysteries to be investigated as well as summaries of your best success stories to MI via email (PhotoSleuthMI@gmail.com) or mail. Check out our Facebook page, *Civil War Photo Sleuth*, to continue the discussion online.*

Kurt Luther is an assistant professor of computer science and, by courtesy, history at Virginia Tech. He writes and speaks about ways that technology can support historical research, education and preservation.

If you have an interest in trying out our software (for free) and providing feedback, please visit CivilWarPhotoSleuth.com and sign up.



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