

Curriculum Vitæ

Personal Data:

Last Name: Günther (aka. Gunther)
First Name: Manuel
Academic Degree: Dr.-Ing.
Address: 4850 Nightingale Drive B-207
Colorado Springs, CO 80918
Tel.: +1 (719) 439 - 2565
Email: siebenkopf@googlemail.com
Day of birth: December 3, 1979
Place of birth: Leinefelde (Germany)
Nationality: German



Academic Career (Summary):

- *2015 - present* Research associate in the University of Colorado in Colorado Springs (USA, CO)
- *2012 - 2015* Post-Doc at the Idiap Research Institute in Martigny (Switzerland)
- *2005 - 2011* Doctorate at the Ruhr-University Bochum (Germany)
- *1999 - 2005* Diploma at the Technical University of Ilmenau (Germany)

My Specialties:

- Very good logical and mathematical comprehension
- Excellent German, English, Python, C++, Java, and \LaTeX skills
- Extended knowledge of open source library programming, object oriented programming and GUI programming
- Experiences in teaching and supervising bachelor and master students

Research associate in the VAST lab:

Research associate in the Vision and Security Technology lab at the University of Colorado in Colorado Springs (UCCS) under the supervision of Prof. Dr. Terrance E. Boulton.

September 2015

present



Research Topics (to present date):

- Participating in the UMD research group on the IARPA JANUS project <http://www.iarpa.gov/index.php/research-programs/janus>
- Off-pose face recognition using facial attributes
- Open-set and open world face recognition
- Improving Deep Convolutional Neural Networks (DCNN) to recognize people in difficult conditions

Responsibilities:

- Software development and maintenance in Python and C++
- Implementation and comparison of pose-invariant open-set face recognition algorithms
- Presenting the “Hands-on Tutorial on 2D Face Recognition” in the Biometrics Summer School in Kuala Lumpur, 2016
- Leading the “Unconstrained Face Detection and Open-Set Face Recognition Challenge” held in collaboration with the International Joint Conference in Biometrics (IJCB) in Denver, 2017
- Publication of conference and journal articles
- Supervision of master and PhD students and interns

Post-Doc at Idiap:

Post-Doc at the Biometrics Group of the Idiap Research Institute under the supervision of Dr. Sébastien Marcel.

Research Topics:

January 2012
–
June 2015

- Development and maintenance of the FaceRecLib
<http://pypi.python.org/pypi/facereclib>
- Development of the open source signal processing and machine learning library Bob
<http://www.idiap.ch/software/bob>
- Development of face detection and facial landmark localization algorithms

Responsibilities:

- Open source software development and maintenance in Python and C++
- Implementation and comparison of image and video based face recognition algorithms
- Publication of conference and journal articles
- Leading the “Competition on face recognition in mobile environment using the MOBIO database” held in collaboration with the International Conference of Biometrics (ICB) in Madrid, 2013
- Reviews for Journals TIP, TIFS, IVC, MVAP, NeuNet, SigPro, SMC and ImaVis, and conferences IJCB, BTFS and ACM-MM
- Job interviews for intern and post-doc positions at Idiap
- Supervision of master and PhD students and interns



Doctorate at the INI:

Research assistant at the Institute for Neural Computation, Ruhr-University Bochum under the supervision of PD. Dr. Rolf P. Würtz.

Title of dissertation: *Statistical Gabor Graph Based Techniques for the Detection, Recognition, Classification, and Visualization of Human Faces*

Degree: Doktor-Ingenieur (Dr. Ing.); magna cum laude

September 2005

–

August 2011



Research Topics:

- Face detection
- Face recognition
- Classification of genetic syndromes
- Visualization of texture features

Responsibilities:

- Software development in C++ and Java
- Publication of journal articles
- Periodical project presentations
- Supervision of student programming exercise *Artificial Neural Networks*
- Supervision of bachelor and master theses

Education:

1999 – April 2005	Computer Science Studies at the Technical University Ilmenau (Germany), Specialization: Face Recognition / Biometry Degree: Diplom-Informatiker; Final grade: 1.8 Title of diploma thesis: <i>Klassifikation von Gesichtern mit optimierten lokalen Graphen</i> (Classification of faces with optimized local graphs), written at the C-VIS GmbH in Bochum
1994 – 1998	Abitur at the special school for mathematics and natural science of the Albert-Schweizer Gymnasium in Erfurt (Germany) Specialization: mathematics, computer science Final grade: 1.9
1986 – 1994	Attending the schools: Polytechnische Oberschule Küllstedt (former German Democratic Republic) and St. Josef Gymnasium Dingelstädt (Germany)

In Between:

September 2011
–
December 2011

Preparation and submission of conference papers

July 2005
–
August 2005

Software engineer at the C-VIS GmbH:
Integration of biometric information into ID cards

November 1998
–
August 1999

Basic military service in the German army

List of Publications:

- **M. Günther, A. Rozsa, and T. E. Boulton**
AFFACT: Alignment-Free Facial Attribute Classification Technique
to appear in: International Joint Conference on Biometrics, 2017
- **M. Günther and others**
Unconstrained Face Detection and Open-Set Face Recognition Challenge
to appear in: International Joint Conference on Biometrics, 2017
- **A. Rozsa, M. Günther, and T. E. Boulton**
LOTS about Attacking Deep Features
to appear in: International Joint Conference on Biometrics, 2017
- **A. Anjos, M. Günther, and T. de Freitas Pereira, P. Korshunov, A. Mohammadi, S. Marcel**
Continuously Reproducing Toolchains in Pattern Recognition and Machine Learning Experiments
to appear in: International Conference on Machine Learning (ICML) Workshop on Reproducibility in Machine Learning, 2017
- **A. Rozsa, M. Günther, and T. E. Boulton**
Adversarial Robustness: Softmax versus Openmax
to appear in: British Machine Vision Conference, 2017
- **M. Günther, S. Cruz, and T. E. Boulton**
Toward Open-Set Face Recognition
in: IEEE Conference on Computer Vision and Pattern Recognition Workshops, 2017.
- **E. M. Rudd, A. Rozsa, M. Günther, and T. E. Boulton**
A Survey of Stealth Malware: Attacks, Mitigation Measures, and Steps Toward Autonomous Open World Solutions
in: IEEE Communications Surveys & Tutorials, 2017.
- **A. Rozsa, M. Günther, and T. E. Boulton**
Are Accuracy and Robustness Correlated?
in: IEEE International Conference on Machine Learning and Applications, 2016.

- **A. Rozsa, M. Günther, E. M. Rudd, and T. E. Boulton**
Are Facial Attributes Adversarially Robust?
 in: International Conference on Pattern Recognition, 2016.
- **E. M. Rudd, M. Günther, and T. E. Boulton**
MOON: A Mixed Objective Optimization Network for the Recognition of Facial Attributes
 in: IEEE European Conference of Computer Vision, 2016.
- **E. M. Rudd, M. Günther, and T. E. Boulton**
PARAPH: Presentation Attack Rejection by Analyzing Polarization Hypotheses
 in: IEEE Conference on Computer Vision and Pattern Recognition Workshops, 2016.
- **M. Günther and L. El Shafey and S. Marcel**
Face Recognition in Challenging Environments: An Experimental and Reproducible Research Survey
 in: Face Recognition across the Electromagnetic Spectrum, Springer, 2016.
- **M. Günther, S. Böhringer, D. Wiczorek, and R. P. Würtz**
Reconstruction of Images from Gabor Graphs with Applications in Facial Image Processing
 in: Journal of Wavelets, Multiresolution and Information Processing, 2015.
- **R. Metha, M. Günther, and S. Marcel**
Gender Classification by LUT based boosting of Overlapping Block Patterns
 in: Scandinavian Conference on Image Analysis, 2015.
- **A. Dutta, M. Günther, L. El Shafey, S. Marcel, R. Veldhuis, and L. Spreeuwerts**
Impact of Eye Detection Error on Face Recognition Performance
 in: IET Biometrics, January 2015.
- **M. I. Mandasari, M. Günther, R. Wallace, R. Saedi, S. Marcel and D. van Leeuwen**
Score Calibration in Face Recognition
 in: IET Biometrics, 2014.
- **E. Khoury, L. El Shafey, C. McCool, M. Günther and S. Marcel**
Bi-modal Biometric Authentication on Mobile Phones in Challenging Conditions
 in: Image and Vision Computing (IVC), 2014.

- **E. Khoury, M. Günther, L. El Shafey and S. Marcel**
On the Improvements of Uni-modal and Bi-modal Fusions of Speaker and Face Recognition for Mobile Biometrics
 in: Biometric Technologies in Forensic Science (BTFS), 2013.
- **M. Günther and others**
The 2013 Face Recognition Evaluation in Mobile Environment
 in: The 6th IAPR International Conference on Biometrics (ICB), 2013.
- **E. Khoury and others**
The 2013 Speaker Recognition Evaluation in Mobile Environment
 in: The 6th IAPR International Conference on Biometrics (ICB), 2013.
- **R. P. Kosilek and others**
Automatic Face Classification of Cushings Syndrome in Women – A Novel Screening Approach
 in: Experimental and Clinical Endocrinology & Diabetes, 2013.
- **M. Günther, R. Wallace and S. Marcel**
An Open Source Framework for Standardized Comparisons of Face Recognition Algorithms
 in: European Conference on Computer Vision (ECCV), Workshops and Demonstrations: pages 547-556, 2012.
- **A. Anjos, L. El Shafey, R. Wallace, M. Günther, C. McCool and S. Marcel**
Bob: a Free Signal Processing and Machine Learning Toolbox for Researchers
 in: Proceedings of the ACM Multimedia Conference, 2012
- **M. Günther, D. Haufe and R. P. Würtz**
Face Recognition with Disparity Corrected Gabor Phase Differences
 in: International Conference of Artificial Neural Networks and Machine Learning (ICANN): pages 411-418, 2012.
- **M. Günther**
Statistical Gabor Graph Based Techniques for the Detection, Recognition, Classification, and Visualization of Human Faces
 PhD thesis, Institut für Neuroinformatik, Technische Universität Ilmenau, 2011.
- **S. Böhringer and others**
Genetic determination of human facial morphology: links between cleft-lips and normal variation
 in: European Journal of Human Genetics, 2011.

- **H. J. Schneider and others**
A Novel Approach to the Detection of Acromegaly: Accuracy of Diagnosis by Automatic Face Classification
in: Journal of Clinical Endocrinology and Metabolism, Volume 96/2, 2011
- **S. Böhringer, M. Günther, S. Sinigerova, R. P. Würtz, B. Horsthemke, and D. Wieczorek**
Automated Syndrome Detection in a Set of Clinical Facial Photographs
in: American Journal of Medical Genetics, 2011
- **M. Günther, M. K. Müller and R. P. Würtz**
Two Kinds of Statistics for Better Face Recognition
in: International Conference of Numerical Analysis and Applied Mathematics, pages 1901-1904, 2010
- **M. Günther and R. P. Würtz**
Face Detection and Recognition Using Maximum Likelihood Classifiers on Gabor Graphs
in: International Journal of Pattern Recognition and Artificial Intelligence (Special Issue: Facial Image Processing and Analysis), volume 23/3, pages 433-461, 2009