



Bernd Girod

Robert L. and Audrey S. Hancock Professor in the School of Engineering,
Emeritus

Electrical Engineering

 Curriculum Vitae available Online

CONTACT INFORMATION

• Alternate Contact

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Bio

BIO

Bernd Girod is the Hancock Professor of Electrical Engineering in the Information Systems Laboratory of Stanford University. Before joining Stanford in 1999, he was a Chaired Professor in the Electrical Engineering Department of the University of Erlangen-Nuremberg. His research interests are in the area of image, video, and multimedia systems. He has published over 600 conference and journal papers and 6 books, receiving the EURASIP Signal Processing Best Paper Award in 2002, the IEEE Multimedia Communication Best Paper Award in 2007, the EURASIP Image Communication Best Paper Award in 2008, the EURASIP Signal Processing Most Cited Paper Award in 2008, as well as the EURASIP Technical Achievement Award in 2004 and the Technical Achievement Award of the IEEE Signal Processing Society in 2011. As an entrepreneur, Professor Girod has been involved in several startup ventures, among them Polycom, Vivo Software, 8x8, and RealNetworks. He received an Engineering Doctorate from University of Hannover, Germany, and an M.S. Degree from Georgia Institute of Technology. Prof. Girod is a Fellow of the IEEE, a EURASIP Fellow, a member of the National Academy of Engineering and a member of the German National Academy of Sciences (Leopoldina).

ACADEMIC APPOINTMENTS

- Emeritus Faculty, Acad Council, Electrical Engineering

ADMINISTRATIVE APPOINTMENTS

- Faculty Director, Stanford Center for Image Systems Engineering (SCIEN), (2000- present)
- Director, Max Planck Center for Visual Computing and Communication, (2003- present)
- Director, David and Helen Gurley Brown Institute for Media Innovation, (2012-2015)
- Senior Associate Dean for Online Learning and Professional Development, School of Engineering, (2012-2015)
- Senior Associate Dean at Large, School of Engineering, (2015-2016)

HONORS AND AWARDS

- Fellow, IEEE (1998)
- Signal Processing Best Paper Award, EURASIP (2002)
- Technical Achievement Award, EURASIP (2004)

- Multimedia Communication Best Paper Award, IEEE (2007)
- Induction, German National Academy of Sciences (Leopoldina) (2007)
- Fellow, European Association of Signal Processing (2008)
- Image Communication Best Paper Award, EURASIP (2008)
- Most Cited Paper Award, EURASIP (2009)
- Technical Achievement Award, IEEE Signal Processing Society (2011)
- Election, National Academy of Engineering (2015)

PROFESSIONAL EDUCATION

- Engineering Doctorate, University of Hannover, Germany , Electrical Engineering (1987)
- Master of Science, Georgia Institute of Technology , Electrical Engineering (1980)

LINKS

- <https://web.stanford.edu/~bgirod/>: <https://web.stanford.edu/~bgirod/>
- Google Scholar Profile: http://scholar.google.com/citations?hl=en&user=IEGGMIOAAAAJ&view_op=list_works

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Girod's Image, Video, and Multimedia Systems Group explores algorithms and architectures for delivery, storage, retrieval, processing, and interactive use of multimedia signals and data, including audio and video, images, graphics and text, often in combination. They are currently most interested in mobile visual search, mobile augmented reality, and personalized media. Besides theoretical analyses and systematic experiments to study the underlying principles, they build real-time test beds and prototypes to validate and demonstrate their ideas.

PROJECTS

- Max Planck Center for Visual Computing and Communication

Teaching

COURSES

2025-26

- Seminar Series for Image Systems Engineering: EE 292E (Aut, Win, Spr)

2024-25

- Seminar Series for Image Systems Engineering: EE 292E (Aut, Win, Spr)

2023-24

- Seminar Series for Image Systems Engineering: EE 292E (Aut, Win, Spr)

2022-23

- Seminar Series for Image Systems Engineering: EE 292E (Aut, Win, Spr)

STANFORD ADVISEES

Master's Program Advisor

Daiki Nakajima, Christina Tsangouri

Publications

PUBLICATIONS

- **Real-World Virtual Reality With Head-Motion Parallax.** *IEEE computer graphics and applications*
Thatte, J., Girod, B.
2021; 41 (4): 29-39
- **Gaussian Lifting for Fast Bilateral and Nonlocal Means Filtering** *IEEE TRANSACTIONS ON IMAGE PROCESSING*
Young, S. I., Girod, B., Taubman, D.
2020; 29: 6082–95
- **Fast Optical Flow Extraction From Compressed Video** *IEEE TRANSACTIONS ON IMAGE PROCESSING*
Young, S. I., Girod, B., Taubman, D.
2020; 29: 6409–21
- **Non-line-of-sight Surface Reconstruction Using the Directional Light-cone Transform**
Young, S., Lindell, D. B., Girod, B., Taubman, D., Wetzstein, G., IEEE
IEEE.2020: 1404–13
- **LiFF: Light Field Features in Scale and Depth**
Dansereau, D. G., Girod, B., Wetzstein, G., IEEE Comp Soc
IEEE.2019: 8034–43
- **Solving Vision Problems via Filtering**
Young, S. I., Naman, A. T., Girod, B., Taubman, D., IEEE
IEEE.2019: 5591–5600
- **OPTIMIZING THE BIT ALLOCATION FOR COMPRESSION OF WEIGHTS AND ACTIVATIONS OF DEEP NEURAL NETWORKS**
Zhe, W., Lin, J., Chandrasekhar, V., Girod, B., IEEE
IEEE.2019: 3826–30
- **Recurrent Neural Networks for Person Re-identification Revisited**
Boin, J., Araujo, A., Girod, B., IEEE
IEEE.2019: 147–52
- **Large-Scale Video Retrieval Using Image Queries** *IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS FOR VIDEO TECHNOLOGY*
Araujo, A., Girod, B.
2018; 28 (6): 1406–20
- **EFFECTIVE FISHER VECTOR AGGREGATION FOR 3D OBJECT RETRIEVAL**
Boin, J., Araujo, A., Ballan, L., Girod, B., IEEE
IEEE.2017: 1747–51
- **Overview of the MPEG-CDVS Standard** *IEEE TRANSACTIONS ON IMAGE PROCESSING*
Duan, L., Chandrasekhar, V., Chen, J., Lin, J., Wang, Z., Huang, T., Girod, B., Gao, W.
2016; 25 (1): 179-194
- **A Hybrid Mobile Visual Search System With Compact Global Signatures** *IEEE TRANSACTIONS ON MULTIMEDIA*
Chen, D. M., Girod, B.
2015; 17 (7): 1019-1030
- **The Hidden Sides of Names-Face Modeling with First Name Attributes** *IEEE TRANSACTIONS ON PATTERN ANALYSIS AND MACHINE INTELLIGENCE*
Chen, H., Gallagher, A. C., Girod, B.
2014; 36 (9): 1860-1873
- **Interframe coding of feature descriptors for mobile augmented reality.** *IEEE transactions on image processing*
Makar, M., Chandrasekhar, V., Tsai, S. S., Chen, D., Girod, B.

2014; 23 (8): 3352-3367

- **Memory-Efficient Image Databases for Mobile Visual Search** *IEEE MULTIMEDIA*
Chen, D. M., Girod, B.
2014; 21 (1): 14-23
- **Residual enhanced visual vector as a compact signature for mobile visual search** *SIGNAL PROCESSING*
Chen, D., Tsai, S., Chandrasekhar, V., Takacs, G., Vedantham, R., Grzeszczuk, R., Girod, B.
2013; 93 (8): 2316-2327
- **Fast Computation of Rotation-Invariant Image Features by an Approximate Radial Gradient Transform** *IEEE TRANSACTIONS ON IMAGE PROCESSING*
Takacs, G., Chandrasekhar, V., Tsai, S. S., Chen, D., Grzeszczuk, R., Girod, B.
2013; 22 (8): 2970-2982
- **Rotation-invariant fast features for large-scale recognition and real-time tracking** *SIGNAL PROCESSING-IMAGE COMMUNICATION*
Takacs, G., Chandrasekhar, V., Tsai, S., Chen, D., Grzeszczuk, R., Girod, B.
2013; 28 (4): 334-344
- **Analysis of visual similarity in news videos with robust and memory-efficient image retrieval**
Chen, D., Vajda, P., Tsai, S., Daneshi, M., Yu, M., Chen, H., Girod, B.
2013
- **What's in a Name? First Names as Facial Attributes** *26th IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*
Chen, H., Gallagher, A. C., Girod, B.
IEEE.2013: 3366-3373
- **EIGENNEWS: GENERATING AND DELIVERING PERSONALIZED NEWS VIDEO** *IEEE International Conference on Multimedia and Expo Workshops (ICMEW)*
Daneshi, M., Vajda, P., Chen, D. M., Tsai, S. S., Yu, M. C., Araujo, A. F., Chen, H., Girod, B.
IEEE.2013
- **ANALYSIS OF VISUAL SIMILARITY IN NEWS VIDEOS WITH ROBUST AND MEMORY-EFFICIENT IMAGE RETRIEVAL** *IEEE International Conference on Multimedia and Expo Workshops (ICMEW)*
Chen, D. M., Vajda, P., Tsai, S. S., Daneshi, M., Yu, M. C., Chen, H., Araujo, A. F., Girod, B.
IEEE.2013
- **What's in a Name: First Names as Facial Attributes**
Chen, H., Gallagher, A., Girod, B.
2013
- **Interframe coding of canonical patches for low bit-rate mobile augmented reality** *International Journal of Semantic Computing*.
Makar, M., Tsai, S., Chandrasekhar, V., Chen, D., Girod, B.
2013; 7 (1)
- **EigenNews: A personalized news video delivery platform**
Yu, M., Vajda, P., Chen, D., Daneshi, M., Tsai, S., Araujo, A., Girod, B.
2013
- **EigenNews: Generating and delivering personalized news videos**
Daneshi, M., Vajda, P., Chen, D., Tsai, S., Yu, M., Chen, H., Girod, B.
2013
- **Adaptive Distributed Source Coding** *IEEE TRANSACTIONS ON IMAGE PROCESSING*
Varodayan, D., Lin, Y., Girod, B.
2012; 21 (5): 2630-2640
- **Robust mobile video streaming in a peer-to-peer system** *SIGNAL PROCESSING-IMAGE COMMUNICATION*
Noh, J., Girod, B.
2012; 27 (5): 532-544

- **IPTV Multicast with Peer-Assisted Lossy Error Control** *IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS FOR VIDEO TECHNOLOGY*
Li, Z., Zhu, X., Begen, A. C., Girod, B.
2012; 22 (3): 434-449
- **Compressed Histogram of Gradients: A Low-Bitrate Descriptor** *INTERNATIONAL JOURNAL OF COMPUTER VISION*
Chandrasekhar, V., Takacs, G., Chen, D. M., Tsai, S. S., Reznik, Y., Grzeszczuk, R., Girod, B.
2012; 96 (3): 384-399
- **Visual Text Features for Image Matching** *14th IEEE International Symposium on Multimedia (ISM)*
Tsai, S. S., Chen, H., Chen, D., Parameswaran, V., Grzeszczuk, R., Girod, B.
IEEE.2012: 408-412
- **Describing Clothing by Semantic Attributes** *12th European Conference on Computer Vision (ECCV)*
Chen, H., Gallagher, A., Girod, B.
SPRINGER-VERLAG BERLIN.2012: 609-623
- **Design of a Text Detection System via Hypothesis Generation and Verification**
Tsai, Sam, S., Parameswarany, V., Berclazy, J., Vedanthamy, R., Grzeszczuk, R., Girod, B.
2012
- **Time-Shifted Streaming in a Tree-Based Peer-to-Peer System** *Journal of Communications*
Noh, J., Girod, B.
2012; 7 (3): 202-212
- **Rotation invariant fast features for large-scale recognition**
Takacs, G., Chandrasekhar, V., Chen, D., Tsai, S., Grzeszczuk, R., Girod, B.
2012
- **Describing Clothing by Semantic Attributes**
Chen, H., Gallagher, A., Girod, B.
2012
- **The Stanford/Technicolor/Fraunhofer HHI Video Semantic Indexing System**
Araujo, A., F. de, Silveira, F., Lakshman, H., Zepeda, J., Sheth, A., Perez, P., Girod, B.
2012
- **Rotation-Invariant Fast Features for Large-Scale Recognition** *Conference on Applications of Digital Image Processing XXXV*
Takacs, G., Chandrasekhar, V., Tsai, S., Chen, D., Grzeszczuk, R., Girod, B.
SPIE-INT SOC OPTICAL ENGINEERING.2012
- **GRADIENT PRESERVING QUANTIZATION** *19th IEEE International Conference on Image Processing (ICIP)*
Makar, M., Lakshman, H., Chandrasekhar, V., Girod, B.
IEEE.2012: 2505-2508
- **Improved Coding for Image Feature Location Information** *Conference on Applications of Digital Image Processing XXXV*
Tsai, S. S., Chen, D., Takacs, G., Chandrasekhar, V., Makar, M., Grzeszczuk, R., Girod, B.
SPIE-INT SOC OPTICAL ENGINEERING.2012
- **Interframe Coding of Canonical Patches for Mobile Augmented Reality** *14th IEEE International Symposium on Multimedia (ISM)*
Makar, M., Tsai, S. S., Chandrasekhar, V., Chen, D., Girod, B.
IEEE.2012: 50-57
- **Image Authentication Using Distributed Source Coding** *IEEE TRANSACTIONS ON IMAGE PROCESSING*
Lin, Y., Varodayan, D., Girod, B.
2012; 21 (1): 273-283
- **Distributed Media-Aware Rate Allocation for Video Multicast over Wireless Networks** *IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS FOR VIDEO TECHNOLOGY*
Zhu, X., Schierl, T., Wiegand, T., Girod, B.
2011; 21 (9): 1181-1192

- **Mobile Visual Search: Architectures, Technologies, and the Emerging MPEG Standard** *IEEE MULTIMEDIA*
Girod, B., Chandrasekhar, V., Grzeszczuk, R., Reznik, Y. A.
2011; 18 (3): 86-94
- **Mobile Visual Search [Linking the virtual and physical worlds]** *IEEE SIGNAL PROCESSING MAGAZINE*
Girod, B., Chandrasekhar, V., Chen, D. M., Cheung, N., Grzeszczuk, R., Reznik, Y., Takacs, G., Tsai, S. S., Vedantham, R.
2011; 28 (4): 61-76
- **A unified framework for distributed video rate allocation over wireless networks** *AD HOC NETWORKS*
Zhu, X., Girod, B.
2011; 9 (4): 608-622
- **Spatial-Random-Access-Enabled Video Coding for Interactive Virtual Pan/Tilt/Zoom Functionality** *IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS FOR VIDEO TECHNOLOGY*
Mavlankar, A., Girod, B.
2011; 21 (5): 577-588
- **MOBILE AUGMENTED REALITY FOR BOOKS ON A SHELF** *IEEE International Conference on Multimedia and Expo (ICME)*
Chen, D., Tsai, S., Hsu, C., Singh, J. P., Girod, B.
IEEE.2011
- **ROBUST TEXT DETECTION IN NATURAL IMAGES WITH EDGE-ENHANCED MAXIMALLY STABLE EXTREMAL REGIONS** *18th IEEE International Conference on Image Processing (ICIP)*
Chen, H., Tsai, S. S., Schroth, G., Chen, D. M., Grzeszczuk, R., Girod, B.
IEEE.2011
- **Compressing a Set of CHoG Features** *Conference on Applications of Digital Image Processing XXXIV*
Chandrasekhar, V., Tsai, S. S., Reznik, Y., Takacs, G., Chen, D. M., Girod, B.
SPIE-INT SOC OPTICAL ENGINEERING.2011
- **Mobile Visual Search Using Image and Text Features**
Tsai, S., Chen, H., Chen, D., Vedantham, R., Grzeszczuk, R., Girod, B.
2011
- **The Stanford Mobile Visual Search Dataset**
Chandrasekhar, V., Chen, D., Tsai, S., Cheung, N., Chen, H., Takacs, G., Girod, B.
2011
- **Delay-optimal burst erasure codes for parallel links**
Li, Z., Begen, A., Girod, B.
2011
- **Synchronization of Presentation Slides and Lecture Videos Using Bit Rate Sequences**
Schroth, G., Cheung, N., Steinbach, Eckehard., Girod, B.
2011
- **Correcting Erasure Bursts with Minimum Decoding Delay**
Li, Z., Khisti, A., Girod, B.
2011
- **ClassX – An Open Source Interactive Lecture Streaming System** *ACM Multimedia (MM'11), Scottsdale, Arizona, USA*
Halawa, S., Pang, D., Cheung, N., Girod, B.
2011
- **Mobile Interactive Region-of-Interest Video Streaming with Crowd-Driven Prefetching** *International ACM Workshop on Interactive Multimedia on Mobile and Portable Devices, ACM Multimedia (MM'11) Scottsdale, AZ, USA*
Pang, D., Halawa, S., Cheung, N., Girod, B.
2011
- **Combining Image and Text Features: a Hybrid Approach to Mobile Book Spine Recognition** *ACM Multimedia (MM'11), Scottsdale, AZ*

- Tsai, S., Chen, D., Chen, H., Hsu, C. H., Kim, K. H., Singh, Jatinder, p., Girod, B.
2011
- **Multimedia Technology for Next Generation Online Lecture Video** *IEEE COMSOC MMTC E-Letter*
Cheung, N., Halawa, S., Pang, D., Girod, B.
2011; 6 (1)
 - **Compressed Histogram of Gradients: A Low Bitrate Descriptor** *International Journal on Computer Vision*
Chandrasekhar, V., Takacs, G., Chen, D., Tsai, S., Reznik, Y., Grzeszczuk, R., Girod, B.
2011; 94 (5)
 - **ClassX Mobile - Region-of-Interest Video Streaming to Mobile Devices with Multi-Touch Interaction** *ACM Multimedia (MM'11) Scottsdale, AZ*
Pang, D., Halawa, S., Cheung, N., Girod, B.
2011
 - **Mobile Visual Search** *IEEE Signal Processing Magazine*
Girod, B., Chandrasekhar, V., Chen, D., M., Cheung, N., M., Grzeszczuk, R., Reznik, Y.
2011; 28 (4): 61-76
 - **SYNCHRONIZATION OF PRESENTATION SLIDES AND LECTURE VIDEOS USING BIT RATE SEQUENCES** *18th IEEE International Conference on Image Processing (ICIP)*
Schroth, G., Cheung, N., Steinbach, E., Girod, B.
IEEE.2011: 925-928
 - **Compressing Feature Sets with Digital Search Trees** *IEEE International Conference on Computer Vision (ICCV)*
Chandrasekhar, V., Reznik, Y., Takacs, G., Chen, D. M., Tsai, S. S., Grzeszczuk, R., Girod, B.
IEEE.2011
 - **City-Scale Landmark Identification on Mobile Devices** *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*
Chen, D. M., Baatz, G., Koeser, K., Tsai, S. S., Vedantham, R., Pylvaenäinen, T., Roimela, K., Chen, X., Bach, J., Pollefeys, M., Girod, B., Grzeszczuk, R.
IEEE.2011: 737-744
 - **MOBILE VISUAL SEARCH ON PRINTED DOCUMENTS USING TEXT AND LOW BIT-RATE FEATURES** *18th IEEE International Conference on Image Processing (ICIP)*
Tsai, S. S., Chen, H., Chen, D., Schroth, G., Grzeszczuk, R., Girod, B.
IEEE.2011
 - **Compression of VQM Features for Low Bit-Rate Video Quality Monitoring** *13th IEEE International Workshop on Multimedia Signal Processing (MMSP)*
Makar, M., Lin, Y., de Araujo, A. F., Girod, B.
IEEE.2011
 - **QUALITY-CONTROLLED VIEW INTERPOLATION FOR MULTIVIEW VIDEO** *18th IEEE International Conference on Image Processing (ICIP)*
Makar, M., Lin, Y., Cheung, N., Pang, D., Girod, B.
IEEE.2011: 1805-1808
 - **ROBUST TEXT DETECTION IN NATURAL IMAGES WITH EDGE-ENHANCED MAXIMALLY STABLE EXTREMAL REGIONS** *18th IEEE International Conference on Image Processing (ICIP)*
Chen, H., Tsai, S. S., Schroth, G., Chen, D. M., Grzeszczuk, R., Girod, B.
IEEE.2011
 - **Compressing a Set of CHOg Features** *Conference on Applications of Digital Image Processing XXXIV*
Chandrasekhar, V., Tsai, S. S., Reznik, Y., Takacs, G., Chen, D. M., Girod, B.
SPIE-INT SOC OPTICAL ENGINEERING.2011
 - **Distributed Media-Aware Rate Allocation for Wireless Video Streaming** *IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS FOR VIDEO TECHNOLOGY*
Zhu, X., Girod, B.
2010; 20 (11): 1462-1474

- **Direction-Adaptive Partitioned Block Transform for Color Image Coding** *IEEE TRANSACTIONS ON IMAGE PROCESSING*
Chang, C., Makar, M., Tsai, S. S., Girod, B.
2010; 19 (7): 1740-1755
- **Quality-Controlled Motion-Compensated Interpolation** *44th Asilomar Conference on Signals, Systems and Computers*
Makar, M., Pang, D., Lin, Y., Girod, B.
IEEE.2010: 865–869
- **Video Streaming with Interactive Pan/Tilt/Zoom** *High-Quality Visual Experience: Creation, Processing and Interactivity of High-Resolution and High-Dimensional Video Signals*
Mavlankar, A., Girod, B.
edited by Mrak, M., Grgic, M., Kunt, M.
Springer.2010: 1
- **On Media Data Structures for Interactive Streaming in Immersive Applications**
Cheung, G., Ortega, A., Cheung, N., Girod, B.
2010
- **Inverted Index Compression for Scalable Image Matching**
Chen, David, M., Tsai, Sam, S., Chandrasekhar, V., Takacs, G., Vedantham, R., Grzeszczuk, R., Girod, B.
2010
- **Quantization Schemes for Low Bitrate Compressed Histogram of Gradients Descriptors**
Chandrasekhar, V., Reznik, Y., Takacs, G., Chen, D., Tsai, S., Grzeszczuk, R., Girod, B.
2010
- **IPTV Multicast with Peer-Assisted Lossy Error Control**
Li, Z., Zhu, X., Begen, Ali, C., Girod, B.
2010
- **Survey of SIFT Compression Schemes**
Chandrasekhar, V., Makar, M., Takacs, G., Chen, David, M., Tsai, Sam, S., Cheung, N., Girod, B.
2010
- **Low Latency Image Retrieval with Progressive Transmission of CHOg Descriptors**
Chandrasekhar, V., Tsai, Sam, S., Takacs, G., Chen, David, M., Cheung, N., Reznik, Y., Girod, B.
2010
- **Restoration of Out-of-focus Lecture Video by Automatic Slide Matching**
Cheung, N., Chen, David, M., Chandrasekhar, Vijay, R., Tsai, S., Takacs, G., Halawa, S., Girod, B.
2010
- **Accelerated IPTV Channel Change with Transcoded Unicast Bursting**
Li, Z., Begen, Ali, C., Zhu, X., Girod, B.
2010
- **Forward Error Protection for Low-Delay Packet Video**
Li, Z., Khisti, A., Girod, B.
2010
- **Mobile Product Recognition**
Tsai, S., Chen, D., Chandrasekhar, V., Takacs, G., Cheung, N., Vedantham, R., Girod, B.
2010
- **Building Book Inventories using Smartphones**
Chen, David, M., Tsai, S., Hsu, C., Kim, K. h., Singh, J. P., Girod, B.
2010
- **An Interactive Region-of-Interest Video Streaming System for Online Lecture Viewing**
Mavlankar, A., Agrawal, P., Pang, D., Halawa, S., Cheung, N., Girod, B.

2010

- **FAST GEOMETRIC RE-RANKING FOR IMAGE-BASED RETRIEVAL** *IEEE International Conference on Image Processing*
Tsai, S. S., Chen, D., Takacs, G., Chandrasekhar, V., Vedantham, R., Grzeszczuk, R., Girod, B.
IEEE.2010: 1029–1032
- **DYNAMIC SELECTION OF A FEATURE-RICH QUERY FRAME FOR MOBILE VIDEO RETRIEVAL** *IEEE International Conference on Image Processing*
Chen, D., Cheung, N., Tsai, S., Chandrasekhar, V., Takacs, G., Vedantham, R., Grzeszczuk, R., Girod, B.
IEEE.2010: 1017–1020
- **SIDE-INFORMATION-ADAPTIVE DISTRIBUTED SOURCE CODING** *IEEE International Conference on Image Processing*
Varodayan, D., Girod, B.
IEEE.2010: 3729–3732
- **COMPARISON OF LOCAL FEATURE DESCRIPTORS FOR MOBILE VISUAL SEARCH** *IEEE International Conference on Image Processing*
Chandrasekhar, V., Chen, D. M., Lin, A., Takacs, G., Tsai, S. S., Cheung, N., Reznik, Y., Grzeszczuk, R., Girod, B.
IEEE.2010: 3885–3888
- **Low-Cost Asset Tracking using Location-Aware Camera Phones** *Conference on Applications of Digital Image Processing XXXIII*
Chen, D., Tsai, S., Kim, K., Hsu, C., Singh, J. P., Girod, B.
SPIE-INT SOC OPTICAL ENGINEERING.2010
- **REAL-TIME VIDEO STREAMING WITH INTERACTIVE REGION-OF-INTEREST** *IEEE International Conference on Image Processing*
Makar, M., Mavlankar, A., Agrawal, P., Girod, B.
IEEE.2010: 4437–4440
- **Unified Real-Time Tracking and Recognition with Rotation-Invariant Fast Features** *23rd IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*
Takacs, G., Chandrasekhar, V., Tsai, S., Chen, D., Grzeszczuk, R., Girod, B.
IEEE COMPUTER SOC.2010: 934–941
- **Permutable Descriptors for Orientation-Invariant Image Matching** *Conference on Applications of Digital Image Processing XXXIII*
Takacs, G., Chandrasekhar, V., Chen, H., Chen, D., Tsai, S., Grzeszczuk, R., Girod, B.
SPIE-INT SOC OPTICAL ENGINEERING.2010
- **Fast Quantization and Matching of Histogram-Based Image Features** *Conference on Applications of Digital Image Processing XXXIII*
Reznik, Y. A., Chandrasekhar, V., Takacs, G., Chen, D. M., Tsai, S. S., Girod, B.
SPIE-INT SOC OPTICAL ENGINEERING.2010
- **Distributed Rate Allocation Policies for Multihomed Video Streaming Over Heterogeneous Access Networks** *IEEE TRANSACTIONS ON MULTIMEDIA*
Zhu, X., Agrawal, P., Singh, J. P., Alpcan, T., Girod, B.
2009; 11 (4): 752-764
- **Systematic Lossy Error Protection of Video Signals (vol 18, pg 1347, 2008)** *IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS FOR VIDEO TECHNOLOGY*
Rane, S., Baccichet, P., Girod, B.
2009; 19 (3): 452-452
- **DISTRIBUTED SOURCE CODING AUTHENTICATION OF IMAGES WITH AFFINE WARPING** *IEEE International Conference on Acoustics, Speech and Signal Processing*
Lin, Y., Varodayan, D., Girod, B.
IEEE.2009: 1481–1484
- **Streaming Mobile Augmented Reality on Mobile Phones** *8th IEEE International Symposium on Mixed and Augmented Reality*
Chen, D. M., Tsai, S. S., Vedantham, R., Grzeszczuk, R., Girod, B.
IEEE.2009: 181–182
- **DISTRIBUTED SOURCE CODING AUTHENTICATION OF IMAGES WITH CONTRAST AND BRIGHTNESS ADJUSTMENT AND AFFINE WARPING** *Picture Coding Symposium 2009*

- Lin, Y., Varodayan, D., Girod, B.
IEEE.2009: 317–320
- **Location Coding for Mobile Image Retrieval**
Tsai, Sam, S., Chen, D., Takacs, G., Chandrasekhar, V., Singh, Jatinder, P., Girod, B.
2009
 - **Streaming to Mobile Users in a Peer-to-Peer Network**
Noh, J., Makar, M., Girod, B.
2009
 - **Peer-to-Peer Television, Ready for Prime Time? *IEEE COMSOC MMTC E-Letter***
Girod, B.
2009; 4 (9): 8-10
 - **Robust Image Retrieval using Multiview Scalable Vocabulary Trees**
Chen, D., M., Tsai, S., S., Chandrasekhar, V., Takacs, G., Singh, J., P., Girod, B.
2009
 - **Image-Based Retrieval with a Camera-Phone**
Tsai, Sam, S., David, M., Chen, Singh, Jatinder, P., Girod, B.
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