

2015 IEEE Applied Imagery Pattern Recognition Workshop (AIPR 2015)

**Washington, DC, USA
13-15 October 2015**



**IEEE Catalog Number: CFP15274-POD
ISBN: 978-1-4673-9559-5**

**Copyright © 2015 by the Institute of Electrical and Electronic Engineers, Inc
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

******This publication is a representation of what appears in the IEEE Digital Libraries. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP15274-POD
ISBN (Print-On-Demand):	978-1-4673-9559-5
ISBN (Online):	978-1-4673-9558-8
ISSN:	1550-5219

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

ONLINE SIGNATURE VERIFICATION USING THE ENTROPY FUNCTION	1
<i>M. Hammandlu ; F. Sayeed ; S. Vasikarla</i>	
SUSPICIOUS FACE DETECTION BASED ON EYE AND OTHER FACIAL FEATURES	
MOVEMENT MONITORING.....	8
<i>C. Tiwari ; M. Hammandlu ; S. Vasikarla</i>	
PARALLEL PHOTON MAPPING COMPUTATIONS TO ENABLE FAST APPROXIMATE	
SOLUTIONS TO THE ART GALLERY AND WATCHMAN ROUTE PROBLEMS	16
<i>B. Johnson ; V. An ; J. Isaacs</i>	
THE ROLE OF IMAGING IN THE DETECTION, IDENTIFICATION, AND TREATMENT OF	
CANCER.....	23
<i>E. Williams</i>	
MACHINE VISION ALGORITHMS FOR ROBUST ANIMAL SPECIES IDENTIFICATION	29
<i>C. J. Cohen ; D. Haanpaa ; J. P. Zott</i>	
DISCOVERING COMPOSITIONAL TRENDS IN MARS ROCK TARGETS FROM CHEMCAM	
SPECTROSCOPY AND REMOTE IMAGING	36
<i>D. Oyen ; N. Lanza ; R. Porter</i>	
ERROR ESTIMATION FOR GRIDDED BATHYMETRY	44
<i>P. Doucette ; J. Dolloff ; A. Braun ; A. Gurson ; C. H. Read ; B. Shapo</i>	
CONTOURLET IMAGE PREPROCESSING FOR ENHANCED CONTROL POINT SELECTION	
IN AIRBORNE IMAGE REGISTRATION.....	64
<i>T. Sobolewski ; N. Messer ; A. Lutz ; S. Ezekiel ; E. Blasch ; M. Alford ; A. Bubalo</i>	
BANDELET TRANSFORMATION BASED IMAGE REGISTRATION	70
<i>A. Lutz ; K. Grace ; N. Messer ; S. Ezekiel ; E. Blasch ; M. Alford ; A. Bubalo ; M. Cornacchia</i>	
ROC CURVE ANALYSIS FOR VALIDATING OBJECTIVE IMAGE FUSION METRICS	76
<i>N. Messer ; S. Ezekiel ; M. H. Ferris ; E. Blasch ; M. Alford ; M. Cornacchia ; A. Bubalo</i>	
UNSUPERVISED CLASSIFICATION OF SAR IMAGERY USING POLARIMETRIC	
DECOMPOSITION TO PRESERVE SCATTERING CHARACTERISTICS	82
<i>R. Marapareddy ; J. V. Aanstoos ; N. H. Younan</i>	
INTEGRATING TEMPORAL AND SPECTRAL FEATURES OF ASTRONOMICAL DATA	
USING WAVELET ANALYSIS FOR SOURCE CLASSIFICATION	87
<i>T. N. Ukwatta ; P. R. Wozniak</i>	
HIGH ACCURACY OPTICAL FLOW BASED FUTURE IMAGE FRAME PREDICTOR MODEL	97
<i>N. K. Verma ; D. E. Gunesh ; G. S. S. S. Rao ; A. Mishra</i>	
INDEXING OPEN IMAGERY TO CREATE TOOLS TO FIGHT SEX TRAFFICKING	103
<i>A. Stylianou ; A. Norling-Ruggles ; R. Souvenir ; R. Pless</i>	
SEEING THE EARTH IN THE CLOUD: PROCESSING ONE PETABYTE OF SATELLITE	
IMAGERY IN ONE DAY	109
<i>M. S. Warren ; S. P. Brumby ; S. W. Skillman ; T. Kelton ; B. Wohlberg ; M. Mathis ; R. Chartrand ; R. Keisler ; M. Johnson</i>	
CHANGE DETECTION ANALYSIS OF TORNADO DISASTER USING CONDITIONAL	
COPULAS AND DATA FUSION FOR COST-EFFECTIVE DISASTER MANAGEMENT	121
<i>B. Gokaraju ; A. C. Turlapati ; D. A. Doss ; R. L. King ; N. H. Younan</i>	
FINE-GRAIN UNCOMMON OBJECT DETECTION FROM SATELLITE IMAGES	129
<i>L. Lee ; B. Smith ; T. Chen</i>	
EFFICIENT DENSE RECONSTRUCTION USING GEOMETRY AND IMAGE CONSISTENCY	
CONSTRAINTS	135
<i>M. M. Shashkov ; J. Mak ; S. Recker ; C. Nguyen ; J. Owens ; K. I. Joy</i>	
COMPREHENSIVE REVIEW OF EVOLUTION OF SATELLITE SENSOR SPECIFICATIONS	
AGAINST SPEEDUP PERFORMANCE OF PATTERN RECOGNITION ALGORITHMS IN	
REMOTE SENSING	142
<i>B. Gokaraju ; S. Bhushan ; V. Anantharaj ; A. C. Turlapati ; D. A. Doss</i>	
UNSUPERVISED APPROACH FOR OBJECT MATCHING USING SPEEDED UP ROBUST	
FEATURES.....	150
<i>A. H. Vardhan ; N. K. Verma ; R. K. Sevakula ; A. Salour</i>	
HYBRID SENSING FACE DETECTION AND RECOGNITION	158
<i>Mingyuan Zhou ; Haiting Lin ; Jingyi Yu ; S. S. Young</i>	

IMAGE RECONSTRUCTION USING THE RECONFIGURATION TECHNIQUE	167
<i>E. A. M. Mbock</i>	
AEGIS AUTONOMOUS TARGETING FOR THE CURIOSITY ROVER'S CHEMCAM INSTRUMENT	176
<i>R. Francis ; T. Estlin ; D. Gaines ; B. Bornstein ; S. Schaffer ; V. Verma ; R. Anderson ; M. Burl ; S. Chu ; R. Castano ; D. Thompson ; D. Blaney ; L. De Flores ; G. Doran ; T. Nelson ; R. Wiens</i>	
RUNWAY ASSESSMENT VIA REMOTE SENSING	181
<i>L. Dabbiru ; P. Wei ; A. Harsh ; J. White ; J. E. Ball ; J. Aanstoos ; P. Donohoe ; J. Doyle ; S. Jackson ; J. Newman</i>	
PERCEIVED X-RAY IMAGE QUALITY FOR BAGGAGE SCREENING	185
<i>J. Irvine ; M. Young ; S. German ; R. Eaton</i>	
HYPERSPECTRAL TARGET DETECTION USING MANIFOLD LEARNING AND MULTIPLE TARGET SPECTRA.....	194
<i>A. K. Ziemann ; J. Theiler ; D. W. Messinger</i>	
SPECTRAL SHIP SURVEILLANCE FROM SPACE	201
<i>A. Schaum ; E. Allman ; R. A. Leathers</i>	
3D CAMERA IDENTIFICATION FOR ENABLING ROBOTIC MANIPULATION.....	209
<i>G. Beach ; C. J. Cohen ; D. Haapaa ; S. Rowe ; P. Mahal</i>	
IMPROVED GAIT RECOGNITION BASED ON SPECIALIZED DEEP CONVOLUTIONAL NEURAL NETWORKS	215
<i>M. Alotaibi ; A. Mahmood</i>	
AUTONOMOUS ON-BOARD NEAR EARTH OBJECT DETECTION.....	222
<i>P. Rajan ; P. Burlina ; M. Chen ; D. Edell ; B. Jedynak ; N. Mehta ; A. Sinha ; G. Hager</i>	
AUTOMATED VARIABILITY SELECTION IN TIME-DOMAIN IMAGING SURVEYS USING SPARSE REPRESENTATIONS WITH LEARNED DICTIONARIES	232
<i>D. I. Moody ; P. R. Wozniak ; S. P. Brumby</i>	
APPLYING ATTRIBUTES TO IMPROVE HUMAN ACTIVITY RECOGNITION	240
<i>D. Tahmoush ; C. Bonial</i>	
Author Index	