# TABLE OF CONTENTS

**PREFACE**  
Andy Vidan, Daniel Shoag

**A PEOPLE & PURPOSE APPROACH TO HUMANITARIAN DATA INFORMATION SECURITY AND PRIVACY**  
Jennifer Chan, Lauren Bateman, Gisli Olafsson

**DESIGNING FOR NETWORKED COMMUNITY RESILIENCE**  
Tina Comes

**SUPPLY CHAIN OPTIMIZATION: ENHANCING END-TO-END VISIBILITY**  
Beverley Sithole, Sergio Guedes Silva, Mirjana Kavelj

**ANALYZING THE NATIONAL DISASTER RESPONSE FRAMEWORK AND INTER-ORGANIZATIONAL NETWORK OF THE 2015 NEPAL/GORKHA EARTHQUAKE**  
Mizan Bustanul Fuady Bnarsi, Shohei Beniya

**GEOGRAPHY OF SOLIDARITY: SPATIAL AND TEMPORAL PATTERNS**  
Noora Al Emadi, Heather Leson, Ji Lucas, Patrick Meier, Javier Borge-Holthoefer

**MLABOUR: DESIGN AND EVALUATION OF A MOBILE PARTOGRAPH AND LABOR WARD MANAGEMENT APPLICATION**  
Jennifer Schweers, Maryam Khalid, Heather Underwood, Srishi Bishnoi, Manju Chhugani

**EXPERIENCE OF USING SIMULATION TECHNOLOGY AND ANALYTICS DURING THE EBOLA CRISIS TO EMPOWER FRONTLINE HEALTH WORKERS AND IMPROVE THE INTEGRITY OF PUBLIC HEALTH SYSTEMS**  

**INTEGRATED ON-CHIP MICROFLUIDIC IMMUNOASSAY FOR RAPID BIOMARKER DETECTION**  

**PRIMER FOR IMAGE INFORMATICS IN PERSONALIZED MEDICINE**  
Young Hwan Chang, Patrick Foley, Vahid Azimi, Rohan Borkar, Jonathan Lefman

**ON SELECTING AN APPROPRIATE CUSTOMIZABLE ELECTRONIC SELF-REPORT SURVEY RESEARCH TECHNOLOGY**  
Stan Mierzwia, Sanir Soudi, Craig Savel

**CHANGE IN WATER ACTIVITY AND FUNGAL COUNTS OF MAIZE-PIGEON PEA FLOUR DURING STORAGE UTILIZING VARIOUS PACKAGING MATERIALS**  
Subuola Fasoyiro, Rebecca Hovingh, Hassan Gourama, Catherine Cutter

**BURULI ULCEER: A JOURNEY TO UNVEILING ITS MODE OF TRANSMISSION IN NIGERIA**  
Joy Anogwih, Chiamaka Odenigbo, Fouad A. Adetoro

**TRACKING USER-MOVEMENT IN OPPORTUNISTIC NETWORKS TO SUPPORT DISTRIBUTED QUERY-RESPONSE DURING DISASTER MANAGEMENT**  
Somprakash Bandopadhayay, Apratim Mukherjee

**CROWDAR: A LIVE VIDEO ANNOTATION TOOL FOR RAPID MAPPING**  
Elliot Salisbury, Sebastian Stein, Sarvapali Ramchurn

**TOWARDS A REAL-TIME MEASUREMENT PLATFORM FOR MICROGRIDS IN ISOLATED COMMUNITIES**  
Geir Kulba, Marta Molinas, Lars Lundheim, Bjorn B. Larsen

**SILICONE-BASED COMPOSITES AS SURGICAL BREAST MODELS FOR ONCOPLASTY TRAINING**  
Denz Kilic, Burcin Ustbas, Ece Polen Budak, Hanede Eyisoylu, Cem Yilmaz, Barkin Eldem, Ozge Akbulut

**ANSIBLE: VIRTUAL REALITY FOR BEHAVIORAL HEALTH**  
Peggy Wu, Jacqueline Morie, Pete Wall, Tammy Ott, Kim Binsted

**INFORMATION AND COMMUNICATION TECHNOLOGY FOR CHILD PROTECTION CASE MANAGEMENT IN EMERGENCIES: AN OVERVIEW OF THE EXISTING EVIDENCE BASE**  
Nadi N. Kaonga, Hima Batavia, William C. Philbrick, Patricia N. Michael

**INFRASTRUCTURE EVOLUTION ANALYSIS VIA REMOTE SENSING IN AN URBAN REFUGEE CAMP – EVIDENCE FROM ZA’ATARI**  
Brian Tomaszewski, Sara Tibbets, Yusuf Hamad, Nijad Al-Najdawi

**DESIGN AND SIMULATION OF FATIGUE ANALYSIS FOR A VEHICLE SUSPENSION SYSTEM (VSS) AND ITS EFFECT ON GLOBAL WARMING**  
Christianah O. Ijagbemi, Bankole I. Oladapo, Harold M. Campbell, Christopher O. Ijagbemi
MAFURIKO: DESIGN OF NZOIA BASIN LOCATION BASED FLOOD GAME ................................................................. 133
Abby Onencau, Rens Kortmann, Felix Kulei, Bert Enserin

LEARNING TO TRUST THE CROWD: VALIDATING ‘CROWD’ SOURCES FOR IMPROVED
SITUATIONAL AWARENESS IN DISASTER RESPONSE ............................................................................. 141
Colby Howard, David Jones, Steven Reece, Antony Waldock

GRAPH EXTRACTION AND DEMAND PROFILING APPLICATIONS FOR
TRANSPORTATION NETWORK RESEARCH .............................................................................................. 148
Venkateswaran Shekar, Lance Fiondella

IMPLEMENTATION OF A RAPIDLY DEPLOYABLE, MOBILE COMMUNICATIONS SYSTEM
PROTOTYPE FOR DISADVANTAGED ENVIRONMENTS ............................................................................. 158
Timothy M. Hackett, Sven G. Bilén

POST DISASTER SITUATION AWARENESS AND DECISION SUPPORT THROUGH
INTERACTIVE CROWDSOURCING ........................................................................................................... 167
Moumita Basu, Somprakash Bandyopadhyay, Saptarshi Ghosh

ASSESSING THE THERMAL PERFORMANCE OF TEMPORARY SHELTERS .................................................. 174
Ying Yu, Enshen Long, Yuan Shen, Hongxing Yang

MULTI-STAKEHOLDER PARTICIPATION IN DISASTER RECOVERY: A CASE STUDY .......................... 179
Yamini Meduri

TREATMENT OF FOREIGN NATIONAL PRISONERS IN THE ETHIOPIAN FEDERAL PRISON ............... 186
Alemayehu Abdissa

MOBILE PHONES: ESTABLISHED TECHNOLOGIES FOR INNOVATIVE HUMANITARIAN
LOGISTICS CONCEPTS ............................................................................................................................ 191
Ismail Abushaikha, Dorit Schumann-Bölsche

DISRUPTION OF THINGS: A MODEL TO FACILITATE ADOPTION OF IOT-BASED
INNOVATIONS BY THE URBAN POOR ........................................................................................................ 199
Abhimanyu Roy, Ali M. S. Zulazala, Alok Kumar

KNOWING JUST IN TIME: USE CASES FOR MOBILE SURVEYS IN THE HUMANITARIAN
WORLD ......................................................................................................................................................... 201
Nathan Morrow, Nancy Mock, Jean-Martin Bauer, Jennifer Browning

MVAM: A NEW CONTRIBUTION TO THE INFORMATION ECOLOGY OF HUMANITARIAN
WORK .................................................................................................................................................. 217
Nancy Mock, Gaurav Singh, William Olander, Jean-Baptiste Pasquier, Nathan Morrow

DEVELOPMENT OF EXPERIMENTAL DESIGN FOR THE EVALUATION OF FOOD AID
PACKAGING .................................................................................................................................................. 222
Prithiviraj Sundararaman, Mark E. Brennan, Jarrod Goentzel, Daniel D. Frey

CONSTRUCTED STAKEHOLDER PERSONAS: AN EDUCATIONAL TOOL FOR SOCIAL
ENTREPRENEURS ....................................................................................................................................... 230
Kathryn Orbital, Nicholas Frazzette, Khanjan Mehta

STAKEHOLDER JOURNEY MAPPING: AN EDUCATIONAL TOOL FOR SOCIAL
ENTREPRENEURS ........................................................................................................................................ 249
Kathryn Orbital, Nicholas Frazzette, Khanjan Mehta

MODES OF GREENHOUSE WATER SAVINGS ............................................................................................. 259
Nolan O’Connor, Khanjan Mehta

FROM DISASTER TO DEVELOPMENT: FINANCE PROVIDES A PLATFORM TO EMPOWER
TECHNOLOGY FOR RESILIENCE TO CLIMATE CHANGE .................................................................. 267
Daniel B. Oerther

RECOMMENDATIONS FOR TRANSFORMING THE SYRIAN HUMANITARIAN CRISIS .......................... 272
Amira Buz Khalilouf

REMOTELY DESIGNED APPROPRIATE TECHNOLOGY FOR EMERGENCY DISASTER
RESPONSE IN NEPAL ................................................................................................................................. 275
Aaron Brown, A. Michael Bauer

"EDUCATION FOR ALL" IN A CONNECTED WORLD: A SOCIAL TECHNOLOGY-DRIVEN
FRAMEWORK FOR E-MOBILIZING DORMANT KNOWLEDGE CAPITAL THROUGH
SHARIISM AND MASS COLLABORATION ............................................................................................. 284
Somprakash Bandyopadhyay, Arina Bardhan, Priyadarshini Dey, Srimoyee Das, Soumyadip Ghosh, Priyanjit Biswas

DEVELOPMENT OF GUIDELINES FOR THE CONSTRUCTION OF WIND TURBINES USING
SCRAP MATERIAL ................................................................................................................................. 292
Rodrigo M. Rodrigues, Jonathan D. Piper, Siddharth S. Bhattacharya, Siti A. Wilson, Cristian H. Birzer

HUMANITARIAN ACCESS AND TECHNOLOGY: OPPORTUNITIES AND APPLICATIONS ..................... 300
Joe Bellefeu
WESHAREIT GAME: STRATEGIC FORESIGHT FOR CLIMATE-CHANGE INDUCED
DISASTER RISK REDUCTION ................................................................. 307
Abby Onencan, Bartel Van De Walle, Bert Enserink, James Chelang’a, Félix Kulei

COMMUNICATION IS ESSENTIAL FOR GLOBAL IMPACT ......................................................... 316
Jan Servaes, Patchamee Malikhao

HARNESSING CREATIVITY FOR DESIGN: TESTS IN AN INTRODUCTION TO
ENGINEERING CLASS .............................................................................. 322
Heather R. Beem, Gwyndaf Jones

BUSINESS CYCLE SHOCKS TO FOREIGN AID FLOWS .............................................................. 326
Nikolai Boboshko, Stan Veuger

ORGANIC CARBON STOCK AND THEIR DYNAMICS IN REHABILITATION ECOSYSTEM
AREAS OF POST OPEN COAL MINING AT TROPICAL REGION .................................................. 329
Cahyono Agus, Pamungkas B. Putra, Eny Faridah, Dewi Wulandari, Richard R. P. Napitupulu

PREDICTION OF APPROVED ASYLUM SEEKERS IN EUROPEAN COUNTRIES .................. 338
Rong Zhang, Mingyue Fan

AN INTERNATIONAL MILITARY PERSPECTIVE ON INFORMATION SHARING DURING
DISASTERS ........................................................................................................... 348
Rodrigo Arancibia

A FORMAL FRAMEWORK FOR CRISIS MANAGEMENT DESCRIBING INFORMATION
FLOWS AND FUNCTIONAL STRUCTURE ......................................................... 353
Frédéric Bénaheb

COUPLING NILE BASIN 2050 SCENARIOS WITH THE IPCC 2100 PROJECTIONS FOR
CLIMATE-INDUCED RISK REDUCTION ............................................................... 357
Abby Onencan, Bert Enserink, Bartel Van De Walle, James Chelang’a

A MOBILE-BASED HEALTHCARE UTILIZATION ASSESSMENT IN RURAL GHANA .............. 366
Lara D. Vogel, Levi Goertz, Sahayini S. Shani, Mark Boots, Louis Dorval, N. Ewen Wang