

Handbook of Ambient Intelligence and Smart Environments

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Editors

Handbook of Ambient Intelligence and Smart Environments

 Springer

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Contents

Part I Introduction

Ambient Intelligence and Smart Environments: A State of the Art	3
Juan Carlos Augusto, Hideyuki Nakashima, Hamid Aghajan	
1 Introduction	3
2 Sensors, Vision, and Networks	7
3 Mobile and Pervasive Computing	10
4 Human-centered Interfaces	14
5 Artificial Intelligence and Robotics	17
6 Multi-Agents	20
7 Applications	22
8 Societal Implications and Impact	24
9 Selected Research Projects	26
10 Perspectives of the Area	29
11 Conclusions	30
References	31

Part II Sensor, Vision and Networks

A Survey of Distributed Computer Vision Algorithms	35
Richard J. Radke	
1 Introduction	35
2 Distributed Algorithms	37
3 Topology Estimation	38
3.1 Non-overlapping Topology Estimation	40
3.2 Overlapping Topology Estimation	41
4 Camera Network Calibration	42
4.1 Non-overlapping Camera Calibration	43

4.2	Overlapping Camera Calibration	44
4.3	Improving Calibration Consistency	45
5	Tracking and Classification	47
6	Conclusions	49
	References	50
	Video-Based People Tracking	57
	Marcus A. Brubaker, Leonid Sigal and David J. Fleet	
1	Introduction	57
1.1	Tracking as Inference	58
2	Generative Model for Human Pose	60
2.1	Kinematic Parameterization	60
2.2	Body Geometry	61
2.3	Image Formation	62
3	Image Measurements	62
3.1	2D Points	63
3.2	Background Subtraction	64
3.3	Appearance Models	65
3.4	Edges and Gradient Based Features	66
3.5	Discussion	68
4	Motion Models	68
4.1	Joint Limits	69
4.2	Smoothness and Linear Dynamical Models	69
4.3	Activity Specific Models	70
4.4	Physics-based Motion Models	72
5	Inference	73
5.1	Particle Filter	74
5.2	Annealed Particle Filter	75
5.3	Markov Chain Monte Carlo Filtering	78
6	Initialization and Failure Recovery	79
6.1	Introduction to Discriminative Methods for Pose Estimation	80
6.2	Discriminative Methods as Proposals for Inference	82
7	Conclusions	82
	References	83
	Locomotion Activities in Smart Environments	89
	Björn Gottfried	
1	Introduction	89
1.1	Why Locomotion Matters	89
1.2	Overview	90
2	Related Work on Motion Analysis and Smart Environments	90
2.1	Motion Parameters	91
2.2	Precision	91
2.3	Viewpoint	92
2.4	Wayfinding	92

2.5	Modelling	93
2.6	Summary	94
3	Locomotion Activities in Smart Environments	94
3.1	Smart Hospitals	94
3.2	Scenarios in a Smart Hospital	96
3.3	Characterising Locomotion Activities	98
4	The Representation of Locomotion Activities	101
4.1	Spatiotemporal Information	101
4.2	Functional Specification	102
4.3	Allocentric View	104
5	Locomotion Based Algorithms	104
5.1	Planning Scenario	105
5.2	Wayfinding Scenario	106
5.3	Searching Scenario	106
5.4	Monitoring Scenario	108
6	Discussion	109
7	Outlook	110
8	Summary	111
	References	112

Tracking in Urban Environments Using Sensor Networks Based on Audio-Video Fusion

117

Manish Kushwaha, Songhwai Oh, Isaac Amundson, Xenofon Koutsoukos,
Akos Ledeczki

1	Introduction	117
2	Challenges and Related Work	119
3	Architecture	121
4	Audio Beamforming	123
5	Video Tracking	125
6	Time Synchronization	128
6.1	Synchronization Methodology	128
6.2	Evaluation of HSN Time Synchronization	129
6.3	Synchronization Service	130
7	Multimodal Target Tracking	131
7.1	Sequential Bayesian Estimation	132
7.2	Sensor Models	134
7.3	Multiple-Target Tracking	136
8	Evaluation	137
8.1	Sequential Bayesian Estimation	137
8.2	MCMCDA	141
9	Conclusions	144
	References	145

Multi-Camera Vision for Surveillance	149
Noriko Takemura and Hiroshi Ishiguro	
1 Introduction	149
2 Camera Systems	150
2.1 Fixed Camera	150
2.2 Active Camera	152
2.3 Mixed System	152
2.4 Multi-modal System	154
2.5 Surveillance Issues	154
2.6 Location and Subjects	156
2.7 Occlusion	156
3 Case Studies	157
3.1 Real-time cooperative multi-target tracking by dense communication among Active Vision Agents	157
3.2 Tracking Multiple Occluding People by Localizing on Multiple Scene Planes	158
3.3 Applying a Form of Memory-based Attention Control to Activity Recognition at a Subway Station	160
3.4 DMCtrac : Distributed Multi Camera Tracking	161
3.5 Abnormal behavior-detection using sequential syntactical classification in a network of clustered cameras	163
4 Industry Systems	163
5 Conclusion	164
6 Further Reading	165
References	165

Part III Mobile and Pervasive Computing

Collaboration Support for Mobile Users in Ubiquitous Environments . . .	173
Babak A. Farshchian and Monica Divitini	
1 Introduction	173
2 Characteristics of Collaboration	174
2.1 Collaboration and Shared Context	174
2.2 Embodied Interactions and Artifacts as Resources	177
2.3 Mobility of People and Resources	178
2.4 Physical Distribution of People	178
2.5 Flexibility and the Need for Tailoring	179
3 Existing Technology in Support of Ubiquitous Collaboration . . .	180
4 Human Grid as a Unifying Concept for AmI and CSCW	181
4.1 The Example of UbiBuddy	183
4.2 Shared Context in Human Grid	186
4.3 Embodiment in Human Grid	186
4.4 Mobility in Human Grid	187
4.5 Support for Physical Distribution in Human Grid	187

4.6	Flexibility and Tailoring in a Human Grid	187
5	Implementation of Human Grid: The UbiCollab Platform	188
5.1	UbiNode Overall Architecture	189
5.2	Collaboration Instance Manager	190
5.3	Session Manager	192
5.4	Collaboration Space Manager	192
5.5	Service Domain Manager	193
5.6	Resource Discovery Manager	193
5.7	Identity Manager	194
6	Conclusions	195
7	Acknowledgements	196
	References	196
	Pervasive Computing Middleware	201
	Gregor Schiele, Marcus Handte and Christian Becker	
1	Introduction	201
2	Design Considerations	202
2.1	Organizational Model	202
2.2	Provided Level of Abstraction	204
2.3	Supported Tasks	205
3	Spontaneous Interaction	206
3.1	Ubiquitous Communication and Interaction	207
3.2	Integration of Heterogeneous Devices	210
3.3	Dynamic Mediation	211
4	Context Management	214
4.1	Acquisition and Fusion	216
4.2	Modeling and Distribution	217
4.3	Provisioning and Access	218
5	Application Adaptation	218
5.1	Inter-Application Adaptation	219
5.2	Intra-Application Adaptation	222
6	Conclusion	224
	References	225
	Case Study of Middleware Infrastructure for Ambient Intelligence	
	Environments	229
	Tatsuo Nakajima	
1	Introduction	229
2	High Level Abstraction	232
3	Case Studies	233
3.1	Middleware Infrastructure for Distributed Audio and Video Appliances	233
3.2	Middleware Infrastructure to Hide Complex Details in Underlying Infrastructures	237
3.3	Middleware Infrastructure to Support Spontaneous Smart Object Integration	241

3.4	Middleware Infrastructure for Context Analysis	245
4	Middleware Design Issues for Ambient Intelligence	249
4.1	High Level Abstraction and Middleware Design	249
4.2	Interface v.s. Protocol	249
4.3	Non Functional Properties	250
4.4	Portability	251
4.5	Human Factors	251
5	Future Directions	253
	References	253
	Collaborative Context Recognition for Mobile Devices	257
	Pertti Huuskonen, Jani Mäntyjärvi and Ville Könönen	
1	Introduction	257
1.1	Humans: Context-aware Animals	258
2	Context From Collaboration	259
3	Mobile Context Awareness	260
3.1	Context Sources	260
3.2	Application Areas	262
3.3	Context Recognition	263
3.4	Distributed Context Awareness	264
4	Making Rational Decisions	264
4.1	Distributed Decision Making	265
4.2	Voting Protocols as Distributed Decision Making Strategies	265
4.3	Voting as CCR Method	266
5	Case Study: Physical Activity Recognition	270
5.1	Data Set and Test Settings	270
5.2	Empirical Results	272
6	Context Recognition Platform	273
7	The Way Forward	274
7.1	Energy Savings	274
7.2	Risks	275
7.3	Knowledge-based CCR?	276
	References	277
	Security Issues in Ubiquitous Computing	281
	Frank Stajano	
1	Fundamental Concepts	281
1.1	Ubiquitous (Pervasive, Sentient, Ambient. . .) Computing	282
1.2	Security	284
1.3	Security Issues in Ubiquitous Computing	286
2	Application Scenarios and Technical Security Contributions	287
2.1	Wearable Computing	288
2.2	Location Privacy	289
2.3	RFID	292
2.4	Authentication and Device Pairing	298

2.5	Beyond Passwords	301
3	Going Up a Level: the Rest of the Story	304
3.1	Security and Usability	304
3.2	Understanding People	305
3.3	Motivations and Incentives	307
	References	309
Pervasive Systems in Health Care		315
Achilles Kameas, Ioannis Calemis		
1	Introduction	315
2	Overview of Pervasive Healthcare Systems	316
2.1	@HOME	316
2.2	HEARTFAID	317
2.3	ALARM-NET	318
2.4	CAALYX	319
2.5	TeleCARE	319
2.6	CHRONIC	319
2.7	MyHeart	320
2.8	OLDES	321
2.9	SAPHIRE	322
3	Reference Architecture	322
3.1	Input-Output System	323
3.2	Local System	326
3.3	Remote Subsystem	330
4	The HEARTS System	333
4.1	Local Devices/Services	334
4.2	HEARTS-OS	335
4.3	HEARTS Local Subsystem Manager (LSM)	340
4.4	Remote Monitoring	341
5	Conclusions	343
6	Acknowledgement	344
	References	344

Part IV Human-centered Interfaces

Human-centered Computing		349
Nicu Sebe		
1	Introduction	349
2	What is Human-centered Computing?	350
2.1	Gateways and Barriers	350
2.2	Definitions	351
2.3	Scope of HCC	353
2.4	HCC, HCI, CSCW, User-centered Design, and Human Computation	355
3	Areas of Human-centered Computing	356
3.1	Multimedia Production	357

3.2	Multimedia Analysis	358
3.3	Multimedia Interaction	359
4	Applications	361
4.1	Human Spaces	361
4.2	Ubiquitous Devices	362
4.3	Users with Disabilities	362
4.4	Public and Private Spaces	362
4.5	Virtual Environments	363
4.6	Art	363
4.7	Other	363
5	Integrating HCC into a Real (Human) World	363
5.1	Integrating Modalities and Media	364
5.2	Integrating Access	365
5.3	Integrating Resources	365
6	Research Agenda for HCC	366
7	Conclusions	367
	References	368
	End-user Customisation of Intelligent Environments	371
	Jeannette Chin, Victor Callaghan and Graham Clarke	
1	Introduction	371
2	The Home of the Future – A Vision	372
3	Contemporary Work	373
3.1	Pre-programmed Rules	374
3.2	Agent-programmed Rules	375
3.3	User-programmed Rules	376
3.4	Supporting Studies	377
3.5	Discussion	377
4	Pervasive interactive Programming (PiP) – An Example of End-User Programming	378
4.1	PiP Terminology	379
4.2	PiP System Architecture	381
4.3	How the System Works	383
5	The dComp Ontology	387
5.1	dComp Rationale	387
5.2	The dComp Ontology – An Overview	388
6	Evaluation	394
6.1	PiP Testbed	394
6.2	dComp Performance Evaluation	394
6.3	The PiP Evaluation	396
6.4	Results	398
7	Concluding Discussion	401
	References	403

Intelligent Interfaces to Empower People with Disabilities	409
Margrit Betke	
1 Introduction	409
2 The Camera Mouse	411
3 Intelligent Devices for People with Motion Impairments	411
4 Camera-Based Music Therapy for People with Motion Impairments	414
5 Enabling Users to Create Their Own Smart Environments	415
6 Assistive Software for Users with Severe Motion Impairments ...	415
7 Discussion	420
7.1 Successful Design of Camera-based Interfaces for People with Disabilities Requires a User-oriented Approach to Computer Vision Research	420
7.2 Designing Interfaces for People with Disabilities – Research Efforts in Human-Computer Interaction	421
7.3 Progress in Assistive Software Development	422
7.4 The Importance of Computational Social Science to Intelligent Interface Design	423
References	424
Visual Attention, Speaking Activity, and Group Conversational Analysis in Multi-Sensor Environments	433
Daniel Gatica-Perez and Jean-Marc Odobez	
1 Introduction	433
2 Applications	434
2.1 On-line Regulation of Group Interaction	434
2.2 Assistance of Remote Group Interaction	436
3 Perceptual Components: Speaking Turns and Visual Attention ...	438
3.1 Estimating Speaking Turns	438
3.2 Estimating Visual Focus of Attention	440
4 From Speaking Activity and Visual Attention to Social Inference: Dominance Modeling	450
4.1 Dominance in Social Psychology	451
4.2 Dominance in Computing	452
4.3 Dominance Estimation from Joint Visual Attention and Speaking Activity	452
5 Concluding Remarks	455
References	457
Using Multi-modal Sensing for Human Activity Modeling in the Real World	463
Beverly L. Harrison, Sunny Consolvo, and Tanzeem Choudhury	
1 Introduction	463
2 Technologies for Tracking Human Activities	464
2.1 Methods for Logging Physical Activity	464
2.2 The Mobile Sensing Platform (MSP) and UbiFit Garden Application	465

2.3	User Studies	468
3	Usability, Adaptability, and Credibility	469
3.1	Usability of Mobile Inference Technology	469
3.2	Adaptability	472
3.3	Credibility	475
4	Conclusions	476
	References	477
	Recognizing Facial Expressions Automatically from Video	479
	Caifeng Shan and Ralph Braspenning	
1	Introduction	479
2	Problem Space and State of the Art	480
2.1	Level of Description	480
2.2	Static Versus Dynamic Expression	482
2.3	Facial Feature Extraction and Representation	483
2.4	Expression Subspace Learning	487
2.5	Facial Expression Classification	487
2.6	Spontaneous Versus Posed Expression	489
2.7	Expression Intensity	490
2.8	Controlled Versus Uncontrolled Data Acquisition	490
2.9	Correlation with Bodily Expression	492
2.10	Databases	494
3	Facial Expression Recognition with Discriminative Local Features	495
3.1	Local Binary Patterns	495
3.2	Learning Discriminative LBP-Histogram Bins	496
3.3	Experiments	497
4	Discussion	502
	References	503
	Sharing Content and Experiences in Smart Environments	509
	Johan Plomp, Juhani Heinilä, Veikko Ikonen, Eija Kaasinen and Pasi Välikkynen	
1	Introduction	509
2	What is Experience, Can You Share It?	510
2.1	Defining Experience	510
2.2	Experience Design Modeling	510
2.3	On Sharing Experiences	512
3	The Changing Role of the User in Content Provision (Prosumers)	513
4	Smart Environments and Experience Sharing Features	514
4.1	From Ubiquitous Computing to Digital Ecologies	514
4.2	Features for Sharing Content and Experiences	515
5	Examples of Research in Sharing Content and Experiences	518
5.1	Video Content Management in Candela	518
5.2	Context Aware Delivery and Interaction in Nomadic Media	520
5.3	Kontti - Context Aware Services for Mobile Users	521

5.4	m:Ciudad - A Metropolis of Ubiquitous Services	524
5.5	Sharing with My Peer - ExpeShare	524
5.6	Ubimedia Based on Memory Tags	526
6	Discussion	529
7	Acknowledgements	529
	References	529

User Interfaces and HCI for Ambient Intelligence and Smart

Environments	533
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Andreas Butz

1	Input/Output Devices	533
1.1	Displays	533
1.2	Interactive Display Surfaces	535
1.3	Tangible/Physical Interfaces	537
1.4	Adapting Traditional Input Devices	538
1.5	Multi-Device User Interfaces	540
2	Humans Interacting with the Smart Environment	540
2.1	Metaphors and Conceptual Models	540
2.2	Physicality as a Particularly Strong Conceptual Model ..	541
2.3	Another Example: the Peephole Metaphor	543
2.4	Human-centric UIs	544
3	Designing User Interfaces for Ambient Intelligence and Smart Environments	544
3.1	The User-centered Process	545
3.2	Novel Challenges	545
4	Evaluating User Interfaces for Ambient Intelligence and Smart Environments	546
4.1	Adaptation of Existing Evaluation Techniques	546
4.2	Novel Evaluation Criteria	546
5	Case Studies	547
5.1	Applications in the ParcTab project	547
5.2	The MIT Intelligent Room	548
5.3	Implicit interaction: the MediaCup	549
5.4	Tangible Interaction: The MediaBlocks	550
5.5	Multi Device interaction: Sony CSL Interactive Workspaces	550
5.6	Hybrid Interfaces: The PhotoHelix	552
5.7	Summary and Perspective	553
	References	553

Multimodal Dialogue for Ambient Intelligence and Smart Environments 557

Ramón López-Cózar and Zoraida Callejas

1	Introduction	557
2	Context Awareness	558
2.1	Context Detection and Processing	559
2.2	User Modelling	561

3	Handling of Input Information	562
3.1	Abstracting the Environment	562
3.2	Processing Multimodal Input	563
4	Dialogue Management	564
4.1	Interaction Strategies	566
4.2	Confirmation strategies	567
5	Response Generation	567
6	Evaluation	569
6.1	Contextual Evaluation	569
6.2	Evaluation from the Perspective of Human-computer Interaction	570
7	Conclusions	571
	References	572

Part V Artificial Intelligence and Robotics

Smart Monitoring for Physical Infrastructures	581
Florian Fuchs, Michael Berger, and Claudia Linnhoff-Popien	
1 Introduction	581
2 Infrastructure Monitoring in the Context of Ambient Intelligence	582
2.1 State-of-the-Art in Infrastructure Monitoring	584
2.2 Context-Awareness in Ambient Intelligence	584
2.3 Knowledge Representation and Reasoning in the Semantic Web	586
3 Pattern-based Modeling of Context Information and Infrastructure Conditions	586
3.1 Key Terms and Concepts of Condition Monitoring	587
3.2 Ontology Design Pattern for Infrastructure Conditions ..	588
4 Smart Monitoring Architecture	591
5 Reasoning over Distributed Context Information	594
5.1 Answering Conjunctive Queries	595
5.2 Implementation as a Framework	599
6 European Railway Monitoring as a Case Study	600
7 Discussion and Conclusion	602
References	603
Spatio-Temporal Reasoning and Context Awareness	605
Hans W. Guesgen and Stephen Marsland	
1 Introduction	605
2 Motivation	606
3 Sensory Input	609
4 Spatio-Temporal Reasoning	609
5 Symbolic Approaches	614
6 Machine Learning Approaches	617
6.1 Frequent Pattern Data Mining	617
6.2 Graphical Models	620

6.3	Novelty Detection and Habituation	622
6.4	Other Methods	625
7	Conclusion	626
	References	627
From Autonomous Robots to Artificial Ecosystems		631
Fulvio Mastrogiovanni, Antonio Sgorbissa, and Renato Zaccaria		
1	Introduction	631
2	State-of-the-art: Integrated Frameworks for Robots in Smart Environments	633
2.1	Ambience	633
2.2	PEIS Ecology	634
2.3	Ubibot: Sobots, Embots and Mobots	635
2.4	The Artificial Ecosystem	636
3	Application Scenario	638
3.1	Cooperation and Competition for Transportation and Surveillance	640
3.2	Ambience, Ubibot and PEIS Ecology at Work	642
4	Case Study: the Artificial Ecosystem Approach	645
4.1	Basic Principles	645
4.2	Cooperation and Competition in the Reference Scenario	651
4.3	Distributed knowledge representation and reasoning ...	657
5	Conclusion	661
	References	663
Behavior Modeling for Detection, Identification, Prediction, and Reaction (DIPR) in AI Systems Solutions		665
Rachel E. Goshorn, Deborah E. Goshorn, Joshua L. Goshorn, and Lawrence A. Goshorn		
1	Introduction	665
2	AI and Behavior Modeling for DIPR Subsystems	668
2.1	DIPR “Detection” Subsystem	668
2.2	DIPR “Identification” Subsystem	670
2.3	DIPR “Predict” Subsystem	672
2.4	DIPR “Reaction” Subsystem	676
3	Infrastructure for AI Systems Solutions	676
3.1	Physical Infrastructure for AI Systems Solutions	677
3.2	Overlay Architecture for AI Systems Solutions	678
4	Application Models	680
4.1	Application Model (A): AI Decision Making	681
4.2	Application Model (B): Abnormal Behavior Detection .	682
4.3	Application Model (C): Enabling “Smart Environments”	686
4.4	Application Model (D): Environment or “Ambient Intelligence” (Learning)	689
4.5	Application Model (E): Turbocharging Detection Classifier	690

5	Advanced DIPR Systems Engineering	692
5.1	Advanced Fusion Methods Using the DIPR System	692
5.2	Adaptive Learning in the DIPR System	692
6	Summary	694
	References	695

Part VI Multi-Agents

Multi-Agent Social Simulation 699

Itsuki Noda, Peter Stone, Tomohisa Yamashita and Koichi Kurumatani

1	Introduction	699
2	Issues on Multiagent Social Simulation	700
3	Autonomous Vehicles at Intersections	701
3.1	The Intersection Management Protocol	703
3.2	Main Result	706
3.3	Extensions	708
3.4	Summary	710
4	Evaluation of Dial-a-Ride System by Simulation	711
4.1	Problem Domain and Formalization	711
4.2	Simulation Setup	712
4.3	Results and Discussion	713
4.4	Summary	715
5	User Model Constructed Based on Sensor Network	715
5.1	Introduction	715
5.2	Integrated Exhibition Support System	716
5.3	Proofing Experiments in Expo 2005 Aichi	720
5.4	Tour Trend Analysis and Its Application	721
5.5	Summary	724
6	Concluding Remark	724
	References	724

Multi-Agent Strategic Modeling in a Specific Environment 727

Matjaz Gams and Andraz Bezek

1	Introduction	727
2	Overview of the Field	728
3	The Multi-Agent Strategy Discovering Algorithm	731
3.1	Domain-Dependent Knowledge	732
3.2	Graphical Representation	733
3.3	Symbolic Representation	736
4	Human Analysis of Results	738
5	Evaluation	740
5.1	RoboCup	740
5.2	3vs2 Keepaway	742
6	Advantages of Strategic Modeling	744
	References	745

Learning Activity Models for Multiple Agents in a Smart Space	747
Aaron Crandall and Diane J. Cook	
1 Introduction	747
2 Testbeds	749
3 Data Representation	751
4 Classifier	753
5 Results	754
5.1 Time Delta Enhanced Classification	757
5.2 Markov Model Classification Accuracy	760
6 Conclusions	762
References	763
Mobile Agents	767
Ichiro Satoh	
1 Introduction	767
1.1 Mobility and Distribution	769
2 Mobile Agent Platform	770
2.1 Remote Procedure Call	771
2.2 Mobile Agent Languages	773
2.3 Agent Execution Management	774
2.4 Inter-agent Communication	775
2.5 Locating Mobile Agents	775
2.6 Security	775
2.7 Remarks	777
3 Mobile Agent Applications	777
3.1 Remote Information Retrieval	777
3.2 Network Management	778
3.3 Cloud Computing	779
3.4 Mobile Computing	779
3.5 Software Testing	779
3.6 Active Networking	780
3.7 Active Documents	781
4 Ambient Computing	781
4.1 Mobile Agent-based Middleware for Ambient Computing	782
4.2 Context-aware Mobile Agent	782
4.3 Personal-Assistant Agents	783
5 Conclusion	785
References	785
Part VII Applications	
Ambient Human-to-Human Communication	789
Aki Härmä	
1 Introduction	789
2 The Long Call	790
3 Spatial Attributes Of Presence	792

4	Ambient Speech Technology	795
4.1	Ambient Telephone Architecture	796
4.2	Speech Capture And Enhancement	797
4.3	Speech Transmission	802
4.4	Spatial Speech Reproduction	802
5	Tracking And Interaction	807
6	Calibration And Configuration	807
7	Ambient Visual Communication	809
8	Future Research	810
9	Acknowledgements	811
	References	811
	Smart Environments for Occupancy Sensing and Services	819
	Susanna Pirttikangas, Yoshito Tobe, and Niwat Thepvilojanapong	
1	Overview	819
2	Detecting Devices	819
2.1	Infrared	820
2.2	Ultrasonic Sound	820
2.3	FM Radio	823
2.4	WiFi	823
2.5	Ultra-Wideband	824
2.6	Vision	824
2.7	Pressure	825
3	Estimation Algorithms	826
3.1	Location Estimation	826
3.2	WiFi Locationing	827
3.3	GSM cells and GPS	827
3.4	Bayes Filtering	829
3.5	Particle Filtering	829
4	From Measurements to Meaning and Services	830
4.1	Location-Aware Reminders	830
4.2	A Scenario on Routine Learning	830
5	Platforms of smart environments	834
5.1	EasyLiving	834
5.2	Aware Home	835
5.3	PlaceLab House_n	836
5.4	Robotic Room	837
6	Conclusion	838
	References	839
	Smart Offices and Intelligent Decision Rooms	845
	Carlos Ramos, Goreti Marreiros, Ricardo Santos, Carlos Filipe Freitas	
1	Introduction	845
2	Smart Offices	846
2.1	Active Badge	849
2.2	Monica SmartOffice	849

2.3	Stanford's Interactive Workspaces	850
2.4	Intelligent Environment Laboratory of IGD Rostock ...	850
2.5	Sens-R-Us	851
2.6	Smart Doorplate	851
2.7	Ambient Agoras	851
3	Intelligent Meeting Rooms	852
3.1	The IDIAP Smart Meeting Room	853
3.2	SMArT	853
3.3	M4 and AMI	853
3.4	NIST Smart Space Project	854
3.5	MIT Intelligent Room Project	855
4	LAID - Laboratory of Ambient Intelligence for Decision Support	855
4.1	Ubiquitous Group Decision Making	857
4.2	Ubiquitous System Architecture	858
4.3	ABS4GD and WebMeeting Plus	860
4.4	Idea Generation Techniques	865
4.5	Implementation	865
5	Conclusions	869
6	Acknowledgements	870
	References	870

Smart Classroom: Bringing Pervasive Computing into Distance

Learning	875
Yuanchun Shi, Weijun Qin, Yue Suo, Xin Xiao	
1	Introduction 875
2	Smart Classroom: Sensor-Rich Smart Environment 877
2.1	The Layout of Smart Classroom 877
2.2	A Typical User Experience Scenario in Smart Classroom 878
3	Key Multimodal Interface and Context-Awareness Technologies . 879
3.1	Location Tracking 880
3.2	Direct Manipulation based on Laser Pointer Tracking .. 883
3.3	Speaker Tracking based on Microphone Array and Location Sensing 887
3.4	Context-awareness in Smart Classroom 890
4	Large-Scale Real-Time Collaborative Distance Learning Supporting 896
4.1	Totally Ordered Reliable Multicast 896
4.2	Adaptive Multimedia Transport Model 897
4.3	SameView: Real-Time Interactive Distance Learning Application in Smart Classroom 898
5	Smart Platform: Multiagent-Based Infrastructure 900
5.1	Architecture 901
5.2	The Features and Design Objectives 902
6	Conclusion 903
References	 903

Ambient Intelligence in the City	905
Marc Böhlen and Hans Frei	
1 Overview and Motivation and Limitations	905
2 Ambient intelligence and Urbanism – a Reality Check	906
3 Ambient Intelligence and Philosophies of Technology	908
4 Out of Balance	909
4.1 Hydra’s New Heads	910
4.2 Information Cities	911
5 Ambient Agoras	912
5.1 Combat Zones	914
6 Amateur Ambient Intelligence	915
6.1 Slow Space Design	916
6.2 Unusual Encounters	917
6.3 Mobile Devices Everywhere	917
7 Ambient Intelligence for The People	918
7.1 Knowledge from Many Minds	919
8 Remaking Public Space, with and in Spite of Ambient Intelligence	919
8.1 Paths of Surveillance	920
8.2 Staging City Life	921
8.3 Paths of Production	921
8.4 Personal Pollution Control	922
8.5 Full Body Ambient Intelligence	922
9 AmI in the City, Revitalized	925
10 Outlook	926
References	927
The Advancement of World Digital Cities	933
Mika Yasuoka, Toru Ishida and Alessandro Aurigi	
1 Introduction	933
2 American Community Networks	935
3 European Digital Cities	937
4 Asian City Informatization	939
5 Advances in Information and Communication Technologies	941
6 Technologies in Digital City Kyoto	942
6.1 The Information Layer	943
6.2 The Interface Layer	945
6.3 The Interaction Layer	948
6.4 Lessons Learned	949
7 Conclusion	950
References	951

Part VIII Societal Implications and Impact

Human Factors Consideration for the Design of Collaborative Machine

Assistants 955

Sung Park, Arthur D. Fisk, and Wendy A. Rogers

1	Introduction	955
2	Collaborative Machine Assistants (CMAs)	956
3	User Acceptance of CMA	957
3.1	What is Acceptance?	957
3.2	User Characteristics	958
3.3	Technology Characteristics	961
3.4	Relational Characteristics	963
4	Design Guidelines	969
5	Conclusions	971
	References	972

Privacy Sensitive Surveillance for Assisted Living – A Smart Camera

Approach 979

Sven Fleck and Wolfgang Straßer

1	Introduction	979
2	Classification of AAL & Video Surveillance Systems	981
3	Related Work	982
3.1	Related Work – Surveillance	982
3.2	Related Work – Smart Cameras	984
4	Identified Problems of Current Approaches and Resulting Impact	985
4.1	Privacy	985
5	The Proposed SmartSurv Approach for AAL	987
5.1	The Smart Camera Paradigm	987
5.2	SmartSurv 3D Surveillance Architecture	987
5.3	Privacy Filters	988
5.4	Smart Camera Hardware	989
5.5	SafeSenior - The Installation at An Assisted Living Home	989
6	Smart Camera Architecture	991
6.1	Background Modeling and AutoInit	991
6.2	Tracking	992
6.3	2D → 3D Conversion Unit	993
6.4	Handover	993
6.5	Activity Recognition	993
6.6	The Classification & Activity Recognition Flow	995
7	Visualization Fully Decoupled from Sensor Layer	997
7.1	3D Visualization Node - XGRT	997
7.2	Google Earth as Visualization Node	998
7.3	Web Application for Visualization	1000
7.4	Statistics	1001

8	Conclusion and Impact	1003
8.1	Future Directions	1004
	References	1005
Data Mining for User Modeling and Personalization in Ubiquitous Spaces		
Alejandro Jaimes		1009
1	Introduction	1009
2	User Modeling	1010
3	Data Mining & Knowledge Discovery (KDD)	1013
4	Context & Mobile User Modeling	1015
5	Data Mining in User Modeling & Applications	1020
6	Human Factors	1021
7	Evaluation	1024
8	Conclusions & Future Directions	1025
	References	1027
Experience Research: a Methodology for Developing Human-centered Interfaces		
Boris de Ruyter and Emile Aarts		1033
1	Introduction	1033
1.1	From Entertaining to Caring	1034
1.2	From System Intelligence to Social Intelligence	1035
2	Experience Research	1037
2.1	Context Studies	1038
2.2	Lab Studies	1040
2.3	Field Studies	1041
3	ExperienceLab Infrastructure	1042
3.1	HomeLab: the Home Environment	1042
3.2	ShopLab: the Retail Environment	1043
3.3	CareLab: the Assisted Living Environment	1044
4	The ExperienceLab as an Assessment Instrument	1045
4.1	Method	1046
4.2	Procedure	1046
4.3	Materials	1047
4.4	Results	1048
4.5	Discussions	1052
5	Case Study of the Experience Research Approach	1053
5.1	Context-Mapping Study	1053
5.2	Laboratory Study	1055
5.3	Field Study	1057
6	Discussion	1058
	References	1058

Part IX Projects

Computers in the Human Interaction Loop 1065

A. Waibel, R. Stiefelbogen, R. Carlson, J. Casas, J. Kleindienst, L. Lamel, O. Lanz, D. Mostefa, M. Omologo, F. Pianesi, L. Polymenakos, G. Potamianos, J. Soldatos, G. Sutschet, J. Terken

1	Introduction	1065
2	Audio-Visual Perceptual Technologies	1067
2.1	Speech Recognition	1068
2.2	Person Tracking	1070
2.3	Person Identification	1073
2.4	Interaction Cues: Gestures, Body Pose, Head Pose, Attention	1074
2.5	Activity Analysis, Situation Modeling	1076
2.6	Audio-Visual Output Technologies	1078
2.7	Interaction	1078
2.8	Natural Language	1079
3	Technology Evaluations and Data Collection	1080
3.1	Data Collection	1081
3.2	Corpus Annotation	1084
4	Software Infrastructure	1085
4.1	SitCom - The Situation Composer	1087
4.2	Agent Infrastructure	1088
5	CHIL Services	1090
5.1	The Memory Jog	1091
5.2	The Collaborative Workspace	1093
5.3	Managing the Social Interaction: The Relational Cockpit and the Relational Report	1096
5.4	The Connector: A Virtual Secretary in Smart Offices	1100
6	Conclusion	1101
	References	1102

Eye-based Direct Interaction for Environmental Control in

Heterogeneous Smart Environments 1111

Fulvio Corno, Alastair Gale, Päivi Majaranta, and Kari-Jouko Räihä

1	Introduction	1111
2	The COGAIN network	1113
3	Domotic Technology	1114
3.1	Overview of Domotic Technologies	1115
3.2	Architecture for Intelligent Domotic Environment	1119
3.3	The DOG Domotic OSGi Gateway	1122
4	Eye-based Environmental Control	1125
4.1	Overview of Eye Based Environmental Control	1125
4.2	The ART system	1127
4.3	Eye Based Environmental Control and Communication Systems	1129

5	Conclusions	1130
	References	1130
 Middleware Architecture for Ambient Intelligence in the Networked Home		
	Nikolaos Georgantas, Valerie Issarny, Sonia Ben Mokhtar, Yerom-David Bromberg, Sebastien Bianco, Graham Thomson, Pierre-Guillaume Raverdy, Aitor Urbieto and Roberto Speicys Cardoso	1133
1	Introduction	1133
2	Achieving Interoperability in AmI Environments	1135
2.1	The Amigo Service Architecture for Interoperability ...	1136
2.2	Service Discovery Interoperability	1137
2.3	Service Communication Interoperability	1139
3	AmIi Interoperable Service Discovery	1141
3.1	ASDM: A Model for Semantic and Syntactic Service Specification	1142
3.2	ASDL: A Language for Semantic and Syntactic Service Specification	1144
3.3	Interoperable Matching of Service Capabilities	1147
3.4	Ranking Heterogeneous Matching Results	1149
4	AmIi Interoperable Service Communication	1150
4.1	Interoperable Service Discovery and Communication ..	1150
4.2	RPC Communication Stack	1153
4.3	Event-based Interoperability	1155
4.4	AmIi-COM Instances	1157
5	Conclusion	1158
	References	1160
 The PERSONA Service Platform for AAL Spaces		
	Mohammad-Reza Tazari and Francesco Furfari and Juan-Pablo Lázaro Ramos and Erina Ferro	1165
1	An Introduction to the PERSONA Project	1165
2	Requirements on a Service Platform for AAL Spaces	1167
2.1	User Requirements	1167
2.2	Technical Requirements	1169
3	Evaluation of Existing Solutions	1170
4	The PERSONA Architectural Design	1173
4.1	The Abstract Physical Architecture	1173
4.2	The Interoperability Framework	1174
4.3	The PERSONA Platform Services	1177
4.4	The Middleware	1181
4.5	The Ontological Modeling	1184
5	Sensing the environment	1185
5.1	Wireless Sensor Networks	1186
5.2	ZigBee Networks Integration	1188
6	Conclusions	1191
	References	1191

ALADIN - a Magic Lamp for the Elderly?	1195
Edith Maier and Guido Kempter	
1	ALADIN - Magic Lighting for the Elderly? 1195
1.1	The Impact of Lighting on People's Health and Wellbeing 1196
1.2	Wellbeing - a Multifaceted Concept 1197
2	ALADIN's Journey 1198
2.1	Theoretical and Methodological Underpinnings 1198
2.2	Analyzing User Requirements 1199
2.3	Tests in a Laboratory Setting 1200
2.4	User Testing 1202
3	The Modern Version of the Enchanted Lamp 1204
3.1	Technical Architecture - Overview 1205
3.2	Hardware Components 1206
3.3	Software Architecture 1209
4	Discussion of Field Test Results and Outlook 1216
4.1	Findings from Field Trials 1216
4.2	Outlook On ALADIN's Future 1217
4.3	Conclusions 1219
	References 1220
Japanese Ubiquitous Network Project: Ubila	1223
Masayoshi Ohashi	
1	Introduction 1223
2	Ubila's Vision 1225
3	Approach 1225
4	Various Ambient Service Designs and Prototypes 1226
4.1	Basic Component Technology 1226
4.2	Pilot Applications and Services 1227
4.3	Collection and Dissemination of User Profiles 1230
5	Field Trials 1234
5.1	Live Commerce Akiba 1234
5.2	Temperature Monitoring with Airy Notes 1235
5.3	Lifelog Trial 1235
6	Creation of Videos 1237
6.1	Motivation 1237
6.2	First Video: Small Stories in 2008 1237
6.3	Second Video: Aura 1238
7	Building and Operating Smart Spaces 1239
7.1	Akihabara Smart Space 1239
7.2	Yurakucho Smart Space (uPlatea) 1239
7.3	Kitakyushu Smart Space 1240
8	Network or Protocol Oriented R&D 1240
8.1	Protocol Enhancement: OSNAP and CASTANET 1241
8.2	Adaptive Network Control Based on Network Context 1242
8.3	Automatic Network Configuration 1243

9	Defining Context Aware System Architecture	1243
9.1	Ubiquitous Network Architecture and Context	1243
9.2	Contributions to ITU-T	1244
10	Symposium and Contributions to Academia and Fora	1244
11	Related Activities and Future Trends in Japan	1246
11.1	National R&D Projects in Parallel to Ubila	1246
11.2	Other Ubiquitous Computing Related R&D Projects in Japan	1246
11.3	Next Phase	1247
12	Conclusion	1247
	References	1248
	Ubiquitous Korea Project	1251
	Minkoo Kim, We Duke Cho, Jaeho Lee, Rae Woong Park, Hamid Mukhtar, and Ki-Hyung Kim	
1	Introduction	1251
2	Ubiquitous Computing Network	1252
2.1	Project Overview	1252
2.2	Vision: Ubiquitous Smart Space(USS)	1252
2.3	Reference System Architecture and Deployment of USS	1252
2.4	R&D Strategy	1252
2.5	Actual Results	1253
2.6	Sub-projects	1254
2.7	Test Bed	1256
3	Intelligent Service Robots in Ubiquitous Environment	1256
3.1	Introduction	1256
3.2	Task and Knowledge Management Framework	1257
3.3	Task Manager	1259
3.4	Knowledge Manager	1259
3.5	Service Agent	1261
3.6	Results and Conclusion	1262
4	U-Health Projects in Korea	1263
4.1	Concepts of u-Health	1263
4.2	Why u-Health?	1264
4.3	U-Health Projects in Korea	1266
4.4	Today's Reality to Overcome	1269
5	USN Technology for Nation-wide Monitoring	1269
5.1	IP-USN as an Integrating Technology	1270
5.2	Design Goals of WSN Management	1273
5.3	LNMP Architecture	1274
5.4	Nationwide Deployment in Korea	1275
	References	1276
	Index	1279

Part I

Introduction

Ambient Intelligence and Smart Environments: A State of the Art

Juan Carlos Augusto, Hideyuki Nakashima, Hamid Aghajan

1 Introduction

Advances in the miniaturization of electronics is allowing computing devices with various capabilities and interfaces to become part of our daily life. Sensors, actuators, and processing units can now be purchased at very affordable prices. This technology can be networked and used with the coordination of highly intelligent software to understand the events and relevant context of a specific environment and to take sensible decisions in real-time or *a posteriori*.

AmI is aligned with the concept of the “*disappearing computer*” [23, 24, 22]:

“The most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it.”

It is particularly interesting to contrast this time in history when accomplishing Weiser’s aims sounds plausible with the situation five decades ago when computers had the size of a room and the idea of a computer being camouflaged with any environment was an unimaginable notion. Today different appliances have successfully become integrated to our daily life surroundings to such an extent that we use them without consciously thinking about them. Computing devices have transitioned in this past half a century from big mainframes to small chips that can be embedded in a variety of places. This has allowed various industries to silently distribute computing devices all around us, often without us even noticing, both in public spaces and in our more private surroundings. Now washing machines, heating systems and even toys come equipped with some capability for autonomous decision making. Auto-

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