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An Unclear Question: Who Owns Patient Information? A Kantian Take on the Concept of Datenherrschaft

Jani Koskinen(*) and Kai K. Kimppa
Information System Science, Turku School of Economics, University of Turku, Turku, Finland {jasiko,kai.kimppa}@utu.fi

Abstract. Patient information systems are critical instruments in modern healthcare; thus, modern healthcare systems cannot function properly without them. While there are countless varieties of information systems used in healthcare, there is one overarching commonality among them – they all contain information about patients. Different groups involved in healthcare have an interest in patients’ information for different reasons. However, in many countries, it remains unclear who exactly owns the data. This issue thus needs to be resolved. As ethics is critical in determining the justifiable owner of patient information, any legislative solution to competing interests ought to be ethically well justified. In this paper, we argue that an ethically acceptable formulation of the ownership of patient data has already been suggested and that it can be further justified also through the Kantian tradition.

Ethical Gathering of Exercise Metrics from Elderly: Case Jumppatikku

Olli I. Heimo(✉), Tapani N. Liukkonen¹, Miika Oja-Nisula¹, Julius Rajala¹, Anne Paavolainen¹, Kai K. Kimppa², and Tuomas Mäkilä¹
¹Technology Research Center, University of Turku, Turku, Finland
{olli.heimo,tapani.liukkonen,miika.oja-nisula, julius.i.rajala,anne.paavolainen,tuomas.makila}@utu.fi
²Department of Management and Entrepreneurship, University of Turku, Turku, Finland kai.kimppa@utu.fi

Abstract. Health gaming for elderly, alongside with other game types, have become an emerging trend amongst video game industry. As all emerging technologies, it brings some ethical questions which – as usual – are better solved before implementation, for the values these choices reflect to be embedded into the design. In this paper we introduce a case example of the elderly activation system Jumppatikku (‘Exercise stick’) and analyse the main ethical questions of the specific case example, as well as take into consideration other similar systems from the viewpoint of ethical design and responsible research and innovation.
**Assistive Technology Devices for the Oldest-Old: Maintaining Independence for the Fourth Age**

Gillian Harvie(✉), Kenneth Eustace, and Oliver K. Burmeister

Charles Sturt University, Wagga Wagga, Australia

gharvie@bigpond.net.au, {keustace,oburmeister}@csu.edu.au

**Abstract.** User interface design needs to be revisited for our oldest members of society. The literature has shown that over the age of 70 increasing numbers of older people find it difficult to learn, and the rapid changes in technology and associated interfaces make it particularly difficult for our oldest citizens to participate in the digital age. Focused on aged care residents, this is a perspective paper, outlining the needs and suggesting avenues for research in this under researched population of technology users. Also explored in attempts to overcome digital exclusion are the assistive technologies that aid members of this fourth age, as well as their family and professional carers.

**Safety-Enhancing Locating Wearables on Passenger Ships: Privacy and Security Perceptions by the Elderly**

Sonja Th. Kwee-Meier, Eugen Altendorf, Alexander Mertens, and Christopher M. Schlick

Institute of Industrial Engineering, Ergonomics of RWTH Aachen University, Bergdriesch 27, 52062 Aachen, Germany

{s.meier,e.altendorf,a.mertens,c.schlick}@iaw.rwth-aachen.de

**Abstract.** Wearables are intimate solutions for a variety of purposes and could enhance safety on large passenger ships in cases of evacuations. Today’s cruise ships offer capacities of up to 8000 passengers. From a technological point of view, wearables offer support for electronic mustering and more efficient possibilities to search for passengers. However, privacy and security perceptions of wearables have so far remained unclear for safety-critical areas. Moreover, the population on large passenger ships is characterized by a relatively high average age. Therefore, we investigated the results of a survey with 2085 passengers for the relationships between demographic data and privacy and security perceptions. Additionally, we explored potential influences of personal attitudes. Evidence was found that privacy concern and perceived security risk are influenced by age but not by gender. Interestingly, the effect of age on both variables is negative and stronger for security than for privacy perceptions. The individual need for safety contributes to explain both variables significantly. In conclusion, privacy concern and perceived security risk decrease with increasing age and need for safety.
Balancing Act or Compromise? A Case Study Highlighting the Challenges of Trialling IT Services with the Elderly

Sue Hessey, Hazel Lacohee, and Rob Collingridge BT Plc, Ipswich, UK
{sue.hessey,hazel.lacohee,rob.collingridge}@bt.com

Abstract. The world’s population is ageing. Older members of society have needs from IT which can be quite specific, reflecting their living arrangements and increased likelihood of suffering from physical and cognitive impairments. So how can businesses offering IT services understand these needs to develop products and services that this demographic group (and their carers) will be willing to adopt? In this paper we outline the process we went through to attempt to answer this question. Because our research involved elderly and (in some cases) disabled trial participants, the process had ethical considerations at the forefront, which on occasion affected the operational processes involved in bringing the trial to life. We describe the various challenges we encountered, where possible how we overcame them (by balancing commercial, stakeholder and participant requirements or by compromising where we could not), and what we learnt for future trials.

Skeuomorphic Reassurance: Personhood and Dementia

David Kreps, Oliver K. Burmeister, and Jessica Blaynee
1Centre for Digital Business, University of Salford, Salford, UK
d.g.kreps@salford.ac.uk, j.blaynee@edu.salford.ac.uk
2School of Computing and Mathematics, Charles Sturt University, Bathurst, Australia oburmeister@csu.edu.au

Abstract. User interface design needs to be revisited for people with dementia. This paper introduces ‘skeuomorphic reassurance’ as a guiding principle for human interfaces in technological design, particularly for older people and people with dementia (PwD). Skeuomorphs exhibit decorative design elements reminiscent of ‘parent’ objects that incorporated such design elements because they were structurally integral. The philosophy of personhood is discussed in the context of dementia, concluding that the subjective character of conscious mental processes is an irreducible feature of reality, and the persistence of personhood in PwD supports this assertion. Assistive technologies that aid carers, as well as PwD, need to ensure that skeuomorphic reassurance is incorporated in their design, not least because older people and PwD need recognizable interfaces today, but because the problems today’s over-65s have with digital technologies may not go away, but re-present themselves generation after generation, unless skeuomorphic reassurance is built into their design.
Ethical and Legal Issues Involved in the Pro-active Collection of Personal Information with the Aim of Reducing Online Disclosure

Johnny Botha\textsuperscript{1,2(✉)}, Mariki Eloff\textsuperscript{1}, and Marthie Grobler\textsuperscript{2}
\textsuperscript{1}Institute for Corporate Citizenship, University of South Africa, Pretoria, South Africa eloffmm@unisa.ac.za \textsuperscript{2}CSIR, Pretoria, South Africa \{jbotha1,mgrobler1\}@csir.co.za

Abstract: Pro-actively finding leaked information online can potentially reduce detection times to limit the exposure time of personal information on publicly accessible networks. Often the breaches are discovered by an external third party and not the data owner. The time that data is exposed on the Internet has severe negative implications since a significant amount of information disclosed in a data breach has been proven to be used for cybercrime activities. It could be argued that any reduction of data breach exposure time should directly reduce the opportunity for associated cyber-crime. While pro-active breach detection has been proven as potentially viable in previous work, several aspects of such a system still need to be investigated. This paper aims to highlight some of the major ethical and legal issues when pro-actively collecting personal information, through a South African case study, to assist in reducing the amounts of personal information being disclosed online.

A Comparative Legal Study on Data Breaches in Japan, the U.S., and the U.K.

Kaori Ishii\textsuperscript{1(✉)} and Taro Komukai\textsuperscript{2}
\textsuperscript{1}Faculty of Library, Information and Media Science, University of Tsukuba, Tsukuba, Japan kaoriish@slis.tsukuba.ac.jp \textsuperscript{2}College of Risk Management, Nihon University, Tokyo, Japan komukai.taro@nihon-u.ac.jp

Abstract. This paper focuses on the liability and duties of data controllers regarding data leaks and compares the relevant legal schemes of Japan, the U.S., and the U.K. There are three primary approaches to reducing or redressing damages caused by data leaks: (1) providing remedies for data leaks; (2) data security obligations; and (3) notification obligations in the event of a data breach. The aim of this article is to compare the measures on data breaches from the above viewpoints and highlight the relevant issues in order to reach an appropriate solution. To address the issues related to data breaches, legal rules among countries should be common to all due to the worldwide circulation of personal data. Nonetheless, different features are recognizable through the analysis in each chapter. Companies in Japan have thus far eagerly abided by data security obligations even if they are ineffective for data protection. Conducting PIAs is another option to prevent security incidents. If data breach notification rules are introduced, the subject matters to be publicized must be identified and followed by enforcement actions. Also, such rules should contribute to the avoidance of secondary harm. In the U.S., while compensations for data leakage and security breach notification rules have apparently been effectively managed, it is needed to reduce serious harm arising from massive data breach. Obliging companies to maintain data traceability might serve this. In the U.K., data breach notification rules imposed as part of the General Data Protection Regulation need to connect with...
other effective enforcements and contributions to avoiding secondary harm, so as not to become meaningless. We must harmonize the above differences and make ongoing efforts to improve the effectiveness of rules.

**Ethics and Professional Intimacy Within the Search Engine Optimisation (SEO) Industry**

Sophie Iredale and Aleksej Heinze, Salford Business School, Salford, Greater Manchester, UK
s.iredale@edusalford.ac.uk, a.heinze@salford.ac.uk

**Abstract.** Search Engine Optimization (SEO) is the process of increasing a digital profile’s visibility within a search engine for relevant search engine results pages. SEO is playing a critical role within the digital marketing and communication strategies of many organizations globally. Particularly in the UK, digital marketing budgets have continued to rise in the last decade, despite the economic uncertainties. With the increase of spending in SEO related activities, a number of businesses focusing on SEO services have emerged, offering SEO services with unfounded promises. The SEO services are not regulated and do not have recognized ethical standards. Key influences such as a lack of professional intimacy and the velocity of market change are considered, as well as the possibility that the SEO community is becoming divided in its own understanding of what it fundamentally is. Dilution of industry specialism, through a continual attempt at self-preservation and cannibalization of other methods of online communication, is leaving not only SEO practitioners vulnerable, but also the very clients and consumers they are hired to serve. This raises a clear ethical issue that requires further exploration.

**A Participatory Design Program for Making Ethical Choices in Client Vendor Relations in ISD**

Tero Vartiainen, Olli I. Heimo, and Kai K. Kimppa
Faculty of Technology, University of Vaasa, Vaasa, Finland tero.vartiainen@uwasa.fi
Technology Research Center, University of Turku, Turku, Finland olli.heimo@utu.fi
Information Systems Science, University of Turku, Turku, Finland kai.kimppa@utu.fi

**Abstract.** We propose a program for developing ethically sustainable cultures in client–vendor relations in information systems development (ISD). The program is based on the participatory design approach and is motivated by the findings of our survey (n = 20) that explored ethical challenges and good ethical practices in the IT field. The data showed that client–vendor relations are ethically conflicting as profitability pressures, for example, induce IS managers to undertake unethical practices. Based on the results of our survey, we identified a dialectical process in client–vendor relations in the form of thesis, antithesis, and synthesis. In the process, impulses inducing questionable or unethical practices (thesis) confront the guidelines for good ethical practices (antithesis). This confrontation between a thesis and an antithesis is implemented through the program we propose, and as a result, morally better practices are expected to emerge (synthesis).
Narrative Ethics of Personalisation Technologies

Wessel Reijers, Bert Gordijn, and Declan O’Sullivan

School of Computing, ADAPT Centre, Dublin City University, Dublin, Ireland
wreijers@adaptcentre.ie
Institute of Ethics, Dublin City University, Dublin, Ireland
bert.gordijn@dcu.ie
School of Computer Science and Statistics, ADAPT Centre, Trinity College Dublin, Dublin, Ireland
declan.osullivan@cs.tcd.ie

Abstract: Personalisation of digital content is becoming one of the major focus areas of contemporary research in human-computer interaction. Interactions between humans and computer systems such as information retrieval operations, digital learning and self-monitoring are “tailored” to the needs of the human user. In this paper, we aim to increase our philosophical understanding of personalisation and of its ethical implications. We utilise a framework of ethics of narrative technologies that is based on the narrative theory of Paul Ricoeur to explicate how personalisation processes shape the person and interpersonal relations. We argue that personalisation processes can actively configure the narrative understanding of a person they interact with – by which they can implicitly change or re-enforce a person’s normative worldview. Also, personalisation processes can abstract from the world of action by means of profiling – which can have significant risks with regards to the consistency of a person’s character.

“Break the Ice”: The Use of Technology to Initiate Communication in Public Spaces

Matjaž Kljun and Klen Čopič Pucihar
FAMNIT, University of Primorska, Koper, Slovenia
{matjaz.kljun, klen.copic}@famnit.upr.si

Abstract. The use of mobile technologies in public spaces often serves to disconnect users from their surroundings and alienate them from current social setting. However, digital interactions are often seen as the most appropriate method for communicating with strangers because they can be impersonal and free people from the fear of face-to-face rejection and social judgment that is based on first appearance and impression. This paper aims to explore if the perceived sense of security when using internet and mobile technologies for communication could also be established in a public setting of a cafeteria and benefit individuals when they are lonely in a public space. For this purpose, we built a technology probe that facilitates digital interactions (e.g. games, instant messaging, collaborative sketching, etc.) between collocated individuals in a public setting of a cafeteria by placing tablet computers on all tables. Our exploratory study shows that people could benefit from such a system as it is likely to alter their common behaviour—a result of a new possibility of initiating communication without the fear of jeopardizing their integrity.
Enabling Socio-Economic Activities: Opening Global Markets for the Marginalized Through Secure ICT Use

Jackie Phahlamohlaka¹(✉), David Kepaletwe², Vusi Ndala³, and Lebogang Phahlamohlaka⁴ ¹Defence, Peace, Safety and Security, Council for Scientific and Industrial Research, Pretoria, South Africa jphahlamohlaka@csir.co.za² ²Tourism Botswana, Gaborone, Botswana david@simplybotswana.com³ ³SEIDET, Johannesburg, South Africa vndala@seidet.org⁴ ⁴Kobe Institute of Computing, Kobe, Japan s15130@st.kic.ac.jp

Abstract: This paper identifies and describes five economic activities through which ICT could effectively be used to open global markets for rural and marginalized communities. The activities are identified in contexts where there are no industries, there is limited or no access to markets, no access to capital, effectively leveraging and optimizing what already exists in communities. The paper borrows from the smart community centre model of Siyabuswa Educational Improvement and Development Trust (SEIDET) in South Africa and the Botswana Virtual Marketplace Trading Portal to illustrate and to argue that ICT could give marginalized individuals in rural villages in Africa, access to global markets and the technical means for packaging, marketing and selling their own products and thereby creating jobs and alleviating poverty.

Adoption of Social Media for the Banking Sector in Sri Lanka

Parakum Pathirana¹(✉) and Aye Aye Khin²
¹Management and Science University (MSU), Shah Alam, Malaysia amaranga@gmail.com
²Universiti Tunku Abdul Rahman (UTAR), Petalingjaya, Malaysia ayeaye5star@gmail.com

Abstract. Despite social media having a remarkable success in many parts of the world in different contexts such as promoting brands to changing state leaders, the adoption by the banking sector to provide financial services remains relatively low across many parts of the world. Many banking customers are still reluctant to consume financial services via social media. In fact, how banks should adopt social media still remains unanswered, possibly due to the fluidity of social media compared to the rigidity of the banking sector. The aim of this paper is to devise a framework to better understand the determinants of social media adoption among the banking sector based on the Technology Acceptance Model (TAM).
Visualising Actor Network for Cooperative Systems in Marine Technology

Yushan Pan$^{1,2,3}$ and Sisse Finken$^{3,4}$

$^1$AMO, Norwegian University of Science and Technology, Ålesund, Norway
yushan.pan@ntnu.no
$^2$Department of Informatics, University of Oslo, Oslo, Norway
$^3$IT University of Copenhagen, Copenhagen, Denmark
sisf@itu.dk
$^4$Department of Informatics, Linnaeus University, Kalmar/Växjö, Sweden

Abstract. Awareness is a concept familiar to specialists within the field of Computer Supported Cooperative Work (CSCW). It is superior for analysing and describing some of the ad hoc work activities that unfold in cooperation. Such informal activities are outside the scope of engineers’ formal models, which are created to tackle challenges concerning human activities and their social interactions with regards to safety concerns in operation. This paper draws on fieldwork conducted in a marine setting of offshore operations. It presents an attempt to visualise the importance of cooperative work activities that shape computer systems. The aim, thus, is to portray cooperative work in a way that can be valuable for engineers implementing marine technology. We do so by way of presenting a transferring technique (2T) using insights from the CSCW field and Actor Network Theory (ANT).

“To Listen, Share, and to Be Relevant” - Learning Netiquette by Reflective Practice

Halvdan Haugsbakken$^{1,2}$
Department of Sociology and Political Science, Norwegian University of Science and Technology, Trondheim, Norway
Halvdan.Haugsbakken@svt.ntnu.no

Abstract. Over the years, organization researchers have researched use of Social Network Sites (SNSs) in organizations. Organizational research on use of SNSs in public organizations is a growing research field. To expand the latter research stream, this paper explores a trend in the Norwegian public sector, the creation of so-called “betas”, competence groups in social media. This trend illustrates how public employees have started to work professionally with social media. The paper examines a case showing how the members of a beta group affiliated to a municipality, developed a social media strategy to master the unwritten rules of communicating on social media. The paper exemplifies this by analyzing how the beta group members interacted on various SNSs to learn netiquette and used this user experience to provide municipal employees a moral compass to interact online, which had to be created by performing processes of reflection-on-action. Their social media strategy was expressed under the self-designed catchphrase – “to listen, share, and to be relevant”.

**The Embodiment of Relationships of Adult Facebookers**
Myrto Pirli1✉, Sisse Finken2,3, and Christina Mörtberg3
1 Computer Technology Institute and Press “Diophantus”, Patras, Greece myrtopirli@hotmail.com
2 IT University of Copenhagen, Copenhagen, Denmark sisf@iti.dk
3 Department of Informatics, Linnaeus University, Kalmar/Växjö, Sweden {sisse.finken,christina.mortberg}@lnu.se

**Abstract.** In the last decade we have seen a rise of social media. Within this landscape of online services Facebook plays an immense role in facilitating and creating bonds between people. In this paper we enter a qualitative study conducted with a small group of adult Facebookers over 58. We do so in an effort to understand what kind of relationships one can have through this digital media. The theoretical lens used is Phenomenology, which we find fruitful for more carefully looking into relationships between humans and technology.

**Manifestations of Users’ Privacy Concerns in a Formative Usability Test of Social Networking Site**
Kimmo Tarkkanen1✉ and Ville Harkke2
1 Information Systems Science, University of Turku, Turku, Finland kimmo.tarkkanen@utu.fi
2 IAMSR, Åbo Akademi University, Turku, Finland ville.harkke@abo.fi

**Abstract.** Social media and social network sites (SNS) need to preserve users’ privacy, in order to achieve full acceptance and to succeed in the application markets. Thus, SNS developers need to understand and take into account users’ privacy concerns as early as possible in the development. It is difficult, however, to foresee how the system fulfills users’ privacy expectations until the system is in actual use. Different user-centered techniques applied during the development can offer insights for developers into users’ privacy expectations and concerns. In this paper, we empirically show what kinds of privacy concerns users spontaneously brought forth in a formative usability test of a social networking site and how these were attributable to different features of the application and related coping mechanisms. The identified manifestations of privacy concerns help SNS designers and evaluators to pay attention early to privacy issues as a natural part of user centered development.
Denial of Choice: Group Level Disclosure of Private Information

Tharntip Tawnie Chutikulrungsee1(✉), Oliver K. Burmeister2, Yeslam Al-Saggaf3, and Maumita Bhattacharya3
1 School of Computing and Mathematics, Charles Sturt University, Wagga Wagga, Australia {tchutikulrungsee,yalsaggaf}@csu.edu.au
2 School of Computing and Mathematics, Charles Sturt University, Bathurst, Australia oburmeister@csu.edu.au
3 School of Computing and Mathematics, Charles Sturt University, Albury, Australia mbhattachar-ya@csu.edu.au

Abstract. While online social networks (OSNs) allow users to selectively share content as well as limit access to information within users’ own virtual spaces, unfortunately there is little or no control on other-generated content. The full study explores an interdependent privacy regarding other-generated disclosures on OSNs from insiders’ perspectives (the ‘discloser’ and the ‘disclosed’), based upon their lived experiences. An online survey was used to recruit suitable participants who meet the purposive sampling criteria. This paper presents some preliminary findings from a current study, based on an online survey. The online survey result reveals a likelihood of activities associated with other-generated disclosure. This study makes a contribution to the scant literature on OSN interdependent privacy as well as draws attention to tackle these privacy issues in order to discover effective detection mechanisms towards practical solutions in the future.

From Caravaggio to Braque: Digital Technology and the Illusion of Augmented Responsibility

Donatella Padua(✉) Università per Stranieri di Perugia, Perugia, Italy donatella.padua@unistrapg.it

Abstract. According to the Situational Context Theory, the recent accelerated evolution of digital technology (IoT, Microchips) reinforces the trend of progressive reduction of the physical distances between an ‘Augmented individual’ (technology-empowered subjects playing their daily life decision-making processes based on multidimensional choice-sets) and technology. Technology becomes further more competent than the subject in dialoguing with the situational environment, both in the area of information building (search engines) and of location-based dialogue with the daily environment (IoT, NFC, VR). Because of reduced physical distances and the growth in competence of technology, the free-choice based subject’s responsibility, which initially appeared ‘augmented’, in reality decreases and becomes an illusion, quite as the cubism illusionism of Braque and Picasso painting. Indeed, in this frame of work, responsibility appears to shift from the augmented individual to organisations and institutions managing technology with competence, within a frame of a digital technology Corporate Social Responsibility.
Examining User Experience in an Augmented Reality Adventure Game: Case Luostarinmäki Handicrafts Museum

Kaapo Seppälä1(&), Olli I. Heimo1, Timo Korkalainen1, Juho Pääkkylä1, Jussi Latvala1, Seppo Helle1, Lauri Härkänen1, Sami Jokela1, Lauri Järvenpää1, Frans Saukko1, Lauri Viinikkala2, Tuomas Mäkilä1, and Teijo Lehtonen1
1 Technology Research Center, University of Turku, Turku, Finland
{kaapo.seppala,olli.heimo,timo.korkalainen,
juho.paakyla,jussi.latvala,seppo.helle,lauri.harkanen,sami.jokela,lauri.jarvenpaa,
frans.l.saukko,tuomas.makila,teijo.lehtonen}@utu.fi
2 Department of Finnish History, University of Turku, Turku, Finland
lauri.viinikkala@utu.fi

Abstract. In this paper we examine the user experience test results of Augmented Reality Adventure Game designed to Finnish Cultural Heritage Site Luostarinmäki Handicrafts Museum in Turku and discuss about the possible and preferable content, development and economic decisions and guidelines for augmented reality applications for museum and Cultural heritage sites.

Using a Mobile Phone as a 2D Virtual Tracing Tool: Static Peephole vs. Magic Lens

Klen Čopič Pucihar1(&), Matjaž Kljun1, and Paul Coulton2
1 FAMNIT, University of Primorska, Koper, Slovenia
{klen.copic,matjaz.kljun}@famnit.upr.si
2 Imagination, Lancaster University, Lancaster, UK
p.coulton@lancaster.ac.uk

Abstract. Traditional sketching aids rely on the physical production of templates or stencils which is particularly problematic in the case of larger formats. One possible solution is 2D virtual tracing using a virtual template to create a physical sketch. This paper evaluates a mobile phone as a 2D virtual tracing tool by comparing three tracing methods: (i) a traditional tracing method with a printed template, (ii) a virtual tracing method Static Peephole (SP) in which the virtual template is manually adjusted to a physical contour by drag and pinch gestures, and (iii) a virtual tracing method augmented reality Magic Lens (ML) in which template is projected on the physical object such as paper hence navigation is possible through physical movement of the mobile device. The results show that it is possible to use mobile phones for virtual tracing, however, ML only achieved comparable performance to SP mode and traditional methods continued to be quicker and preferred by users.
The Beginnings of Government Support for Computers in Schools – The State Computer Education Centre of Victoria in the 1980s

Arthur Tatnall\(^1,2(✉)\)
\(^1\) Victoria University, Melbourne, Australia
Arthur.Tatnall@vu.edu.au
\(^2\) Chair, IFIPWG9.7–History of Computing, London, UK

**Abstract.** The 1980s saw the introduction into education of a new technology – the microcomputer – that many of us saw as an enabling technology that could offer new educational opportunities and potentially change the nature of schools. Discussion of events at this time is very much a socio-technical history of a technological innovation that involved both the computers and the people who managed them, supported them, taught with them and used them. Support structures were introduced to assist with the use of computers in schools and to provide teachers with professional development in order to understand their benefits, to evaluate software, to suggest curriculum applications and to evaluate computer systems for school use. The goal was to offer schools and teachers choice in how they handled this innovation rather than coercion in an attempt to force adoption. Due to the large number of low-cost microcomputers bursting onto the marked in the 1980s computer systems evaluation was especially important. This paper concerns the historical purpose, formation and development of the State Computer Education Centre of Victoria.

Collaborative Annotation Sharing in Physical and Digital Worlds

Jan Grbac, Matjaž Kljun, Klen Čopič Pucihar\(^(*)\), and Leo Gombač
FAMNIT, University of Primorska, Koper, Slovenia
\{jan.grbac,leo.gombac\}@student.upr.si,
\{klen.copic,matjaz.kljun\}@famnit.upr.si

**Abstract.** Despite the existence of a plethora of annotating software for digital documents, many users still prefer reading and annotating them physically on paper. While others have proposed the idea of merging these two worlds, none of them fits all the design requirements identified in this paper (working in real-time, use readily available hardware, augment physical annotations with digital content, support annotation sharing and collaborative learning). In this paper we present the implemented prototype and a focus group study aimed at understanding studying habits and how the system would fit in these. The focus group revealed that paper material is often discarded or archived and annotations lost, web resources are not saved and fade with time, and that the prototype proposed fits in their studying habits and does not introduce any privacy concerns – be it ones related to the prototype’s camera (used in public setting) or ones related to annotations sharing.
Revocable Anonymisation in Video Surveillance: A “Digital Cloak of Invisibility”

Linus Feiten(✉), Sebastian Sester, Christian Zimmermann, Sebastian Volkmann, Laura Wehle, and Bernd Becker
Centre for Security and Society, University of Freiburg, Bertoldstrasse 17, 79085 Freiburg, Germany {feiten,esters,wehle,becker}@informatik.uni-freiburg.de, zimmermann@iig.uni-freiburg.de, sebastian.volkmann@philosophie.uni-freiburg.de

Abstract. Video surveillance is an omnipresent phenomenon in today’s metropolitan life. Mainly intended to solve crimes, to prevent them by realtime-monitoring or simply as a deterrent, video surveillance has also become interesting in economical contexts; e.g. to create customer pro-files and analyse patterns of their shopping behaviour. The extensive use of video surveillance is challenged by legal claims and societal norms like not putting everybody under generalised suspicion or not recording people without their consent. In this work we propose a technological solution to balance the positive and negative effects of video surveillance. With automatic image recognition algorithms on the rise, we suggest to use that technology to not just automatically identify people but blacken their images. This blackening is done with a cryptographic procedure allowing to revoke it with an appropriate key. Many of the legal and ethical objections to video surveillance could thereby be accommodated. In commercial scenarios, the operator of a customer profiling program could offer enticements for voluntarily renouncing one’s anonymity. Customers could e.g. wear a small infrared LED to signal their agreement to being tracked. After explaining the implementation details, this work outlines a multidisciplinary discussion incorporating an economic, ethical and legal viewpoint.

Edges, Surfaces, and Spaces of Action in 21st Century Urban Environments – Connectivities and Awareness in the City

H. Patricia McKenna(✉) AmbientEase, #541, 185-911 Yates Street, Victoria, BC V8V 4Y9, Canada mckennaph@gmail.com

Abstract. The purpose of this paper is to introduce a philosophical and phenomenological perspective to complement, extend, and enrich algorithmic and network views of social media in support of connectivities and awareness in the city. The edges, surfaces, and spaces of 21st century urban environments are explored in relation to how social media is being used to support greater opportunities for awareness and in turn, for more meaningful engagement, learning, and participation in city life. The research design for this study employs an exploratory case study approach, a minimally viable social media space, and multiple methods of qualitative and quantitative data collection and analysis. Anecdotal evidence from informal individual and group discussions conducted in parallel with this study supports further data analysis, comparison, and triangulation. This work makes a contribution to the research literature across multiple domains and a conceptual framework is developed, operationalized, and advanced for connectivities and awareness.