

# Patricia Charlton, Ph.D.

## Personal information

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Senior Lecturer in AI and data Science and Deputy Lead of Curriculum as part of Institute of Coding, Open University, Milton Keynes

Consultant in AI and Analytics, HCI, Interaction design and STEM access for all, Creative Digital Solutions, London/Oxford

## Professional web site

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<https://creatingtodiscover.wordpress.com>

## Summary

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**Researcher, teacher, and innovator with cutting-edge industry, teaching and academic knowledge, practice across engineering, computer science, AI, design, UX and education.**

Award-winning computer science, AI and Analytics, tangible computing, Internet of Things, HCI and Interaction Design, creativity, design-based education researcher in STEM/STEAM with patents and publications in first-rate, international journals demonstrating scientific excellence.

Accomplished teacher across lifelong learning spectrum from K-12 through secondary, tertiary and continuing professional education, with coaching leadership style in doctoral student supervision.

Education designer with mastery of face-to-face, blended, and digital learning contexts, pedagogies, and technologies.

Leader in outreach in Education convening broad, diverse, and international coalitions of partners around key thematic areas in innovative areas of teaching and learning (Maker communities, hackathons, Internet of Things), women in STEM, and technology to empower humanitarian, development and global health work.

Successful fund-raiser and grant writer (30M € funding), with experience managing large, distributed teams in European and global industry, research, and education projects.

## Selected areas of expertise

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- Research and teaching in Applied artificial intelligence (personalization, adaptation and context-ware) and engineering (IoT) and Tangible Computing and semantic web for HCI and interaction design.
- Interdisciplinary research and outreach in ‘maker communities’ bringing art, science and design through innovative tools and techniques for reshaping and engaging with STEM & STEAM.
- Leadership in delivering international outreach through Technology Enhanced Education based on community centred innovation and co-design methods for sustainability
- Innovative design-based thinking for large-scale delivery of leadership & Education change driven via impact evaluation (mixed methods – e.g. using BI designs across quantitative and qualitative learning cycles for professional and organizational change )

## Education

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| 2010 | MSc, Psychodynamics of Human Development, Birkbeck, University of London (2010).                                   |
| 1999 | Ph.D., School of Mathematical Sciences, Bath University. Thesis Title: “Self-configurable Software Agents” (1999). |

1990 BSc.(Hons), Education and AI and Cognitive Science, Independent Study, University of East London (1990)

## **Professional History**

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- 2018 — Senior Lecturer in AI and data Science and Deputy Lead of Curriculum as part of Institute of Coding, Open University, Milton Keynes
- 2014 — Co-founder and Director, Creative Digital Solutions, Design and delivery of STEM curriculum, International Learning Designer, AI and Analytic Solutions, evaluation and large-scale impact studies, HCI and Human-to-Human interactions, Tangible (IoT) & Interactive Designs and Devices, Learning through Making to develop large scale access to one world education.
- 2016 — 2018 Programme Leader for MSc. Computing and IT and MSc. Business with for Northumbria University London Campus delivering modules in Business Intelligence, Business analytics and tools, Web mobile design and development, HCI and UX design/accessibility, research methods (Quantitative and Qualitative methods), Employability Skills and Academic writing. MSc. Business with Advanced practice London Campus, Northumbria University: Business Clinic, Consultancy Projects and Internships with industry
- 2014-- 2018 Professor of technology delivering modules in Technology and Pedagogy for Architects postgraduate students (IE Spain)
- 2012—2016 Senior Research Fellow: Applied science and technology, User centred design, Outreach teaching and learning in STEM, Computer Science and Technology Enhanced Learning, Learning through making, physical computing, UCL Knowledge Lab, UCL IOE
- 2008–2011 Senior Research Fellow: Interdisciplinary research for creating Personalisation and adaptive systems, Technology Enhanced Knowledge Solutions for Teachers and Students, Intelligent HCI, UX design and impact evaluation, Birkbeck University of London, London Knowledge Lab
- 2004–2008 Principal Research Scientist, Personalisation and Knowledge System, Motorola Labs, UK
- 2000–2004 Team leader of The Semantic Personalisation Service Technology Group, Motorola Labs, Paris
- 1996–2000 Research Fellow, Intelligent Systems and Network Group, Imperial College, London
- 1994–1996 Temporary Lecturer in Artificial Intelligence and HCI, University of Westminster, Department of Computer Science and Engineering, London
- 1993–1994 Lecturer (part-time) in computing sciences, University of West of England, Bristol
- 1992–1994 Teaching Assistant, School of Mathematics, Bath University, Bath
- 1990–1992 Research Assistant, School of Mathematics, Bath University, Bath
- 1990–1998 Managing Director, Information Technology Resources Ltd, Bristol

## **Grant writing**

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Secured 30M€ funding in European project proposals.

Lead coordinator of two EU projects: LEAP (2.5M euros) and Agent Cities (5.5M euros).

LEAP was instrumental to the forming of JADE Board, which continues today and agentcities was one of the finalist projects for the Descartes Award.

Learning Design project: Led the design and impact study with Professor Diana Laurillard to create international take up of knowledge construction approach to sharing pedagogy. The design and delivery of International Learning Designs Challenge were instrumental to bringing about change in education on an international scale

## Project Leadership

### Recent projects

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- 2016-2018 **DIY maker science projects through IoT** researching and investigating community-driven projects by students (with QMUL – visiting Research Fellow)
- 2016 **British Museum.** Commissioned by British Museum to deliver design-based digital and tangible resources for learning through making using the BBC micro:bit.
- 2014-2015 **Tate Britain.** Commissioned by Tate to develop learning experiences and impact evaluation instruments for new online learning platform partnership with Khan Academy. Results were used to design more appropriate learning experiences and inform Tate’s education and learning strategy developing new understanding of engagement and interaction designs
- 2015-2017 **Micro:Bit project.** Project Partner (PI) for the Micro:Bit project led by BBC to develop online and face-to-face computer science teaching and learning resources for project partners, schools and communities. The BBC Micro bit project is the largest national project for influencing learning engagement with science and engineering. This project reached over 1 million year 7 (age 11-12) students, as well as, thousand of STEM teachers. Design of teaching and learning resources and workshop for engaging students, parents and teachers.
- 2013–2015 **Building Community Knowledge** (Impact funding ESRC 2013-2015). Design of teaching and learning resources and impact study
- 2012–2015 **Redesigning Education for the Future** (HEFCE 2012-2015): Design, development and evaluation of TEL and online communities with Industry, Academics, Researchers, Teachers and Students for collaborative designing, evaluation and buildings applications, learning designs and prototypes for education.
- 2012–2015 **What The Research Says.** Internationally-known collaborative research program between industry and academia (see <https://www.lkldev.ioe.ac.uk/lklinnovation/>).
- 2012 – **Hack events for education.** Teaching computer science and engineering for teachers and students of all ages.
- 2012 – 2016 **Learning Designer online community.** Development of an online community of teacher-designers around the Learning Designer (<http://learningdesigner.org>), an online learning design tool to enable teachers to create and share.
- 2013-2016 **Senior research officer:** UX design, knowledge engineer and evaluation of designing guided rubric for author-led learning analytics tools. P7-EU project: M C Square. A Computational Environment to Stimulate and Enhance Creative Designs for Mathematical Creativity.
- 2013-2014 Lead design and impact evaluation of International Learning Designs and designing for scaling-up online (MOOCs).
- 2014-2015 Leading design and evaluation of CRAM project for cost modelling of course designs. <http://web.lkldev.ioe.ac.uk/cram/index.html>.
- 2013-2013 Impact analysis of large scale Bioinformatics data on CathDB/UCL to determine user usage
- 2008–2011 **LDSE, The Learning Designer** (2008-2011 ESRC/EPSC UK funded). Led the technical design and development of the project providing an intelligent framework to assist in supporting the teaching community in using theory and practice in the creation and use of Learning Designs.

- 2004–2008 aceMedia, Intelligent knowledge, semantics and Content for user-centred intelligent media services (EU FP6 2004-2008 10.125.808 €.). Technical leadership of Personal Privacy in content sharing and UX design and evaluation.
- 2004-2006 MobiLife, Mobile Life (6th Framework Project FP6-511607, 20 Million Euros, 21 Partners). My core role was in the proposal phase and in the earlier stages of defining the technical architecture and UX experience for Mobile Lifestyle Personalisation Engine and integration design with context-aware feature.
- 2001–2003 Agencities. RTD, Test-bed for a World Wide Agent Network: research and development, (EU FP52001-2003). Project co-ordinator with Dr. Steve Willmott. Finalists for the Descartes Award 2003. Creation of the OpenNet forum to continue the research collaboration.
- 2001-2003 Agencities.Net EU FP5 Project (No. EU - IST 2000-28385 EUR 1 066 979) open dynamic service environment based on Agent technology by supporting users wishing to deploy agent platforms and services that connect to an extensible Internet based testbed.
- 2000–2002 LEAP, Lightweight Extensible Agent Platform, (EU FP5 2000-2002). Prime co-ordinator. Won CIA (Collaborative Information Agents) innovation award. The project led to the creation of the JADE board.
- 1998-2000 FACTS project (FIPA Agent Communication Technologies and Services – European project ACTS 317). Core research was in personalisation systems and affective computing. This included user evaluations of the impact of affective computing when interacting with Intelligent Multimedia applications (from the design of the user evaluation and follow through with small user testing).
- 1998 -2000 MAPPA Project (Multimedia Access through Personal Persistent Agents -- European project EP28831). Developed the MAPPA project idea and wrote and submitted the proposal which was accepted, resulting in the funding of a large international research team including both academic and industrial partners. Manage collaboration between the FACTS and the MAPPA projects to encourage solution sharing, as well as directly supervising some junior research staff working on MAPPA. Supervision and design support for work on extending KIMSAC's asset description language to include richer representation of semantic information for interpretation.
- 1995-1998 KIMSAC project (Kiosk-based Intelligent Multimedia Service Access for Citizens) European project ACTS 030). Workpackage leader for personalization system, design and implementation of an agent architecture and public service provision. Supervision and management of junior staff on the project. Audit reporting and representative at the European commission for project evaluation. Technical management and integration with other partners' software.

### **Projects in development**

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- 2016 Lead with Dr. S. Poslad Creative IoT for Communities Centre launched 2016 for widening participation of engaging with emerging technologies forming part of the DIY community-driven science project
- 2017 Education Design consultant, AGEND, Education Company to deliver world-wide education resources with focus on middle east as current engagement. Design and development of primary school STEM curriculum resources for a new digital platform.

### **Innovation and Leadership**

Part of Tundra System Design Team contributing to design of the next generation Quantum computer. The design of AI features of the architecture to provide adaptive performance value. (<http://www.tundrasystems.eu>).

Trustee, Geneva Learning Foundation. Non-profit organisation based in Switzerland for global learning leaders who contribute to learning innovation in humanitarian, development, and global health work.

Member, Global learning design advisory group, Learning Strategies International (LSi). Leading role in learning design for a massive, open online learning system to train civil servants from Ministries of Health in 192 countries to scale up efforts against the world's biggest killer diseases.

Research solutions with Dr. S. Poslad (QMUL) IoT for Communities Centre design for widening participation of engaging with emerging technologies forming part of the DIY community-driven science projects (<http://iot.eecs.qmul.ac.uk/>)

## **Awards**

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- 2003 – 2006 Motorola Innovation Award
- 2003 EU Descartes award Finalist for Agent Cities (EU project)
- 2001 – 2002 Motorola Standards award for significant contributions to standards

## **Teaching and learning**

### **Learning design, Learning technologies and online tutoring**

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Master facilitator in designing and delivering web learning, peer review, peer instruction and role-playing experiences.

Pedagogical design and technical experience in developing e-learning activities on multiple platforms (including Blackboard, Moodle and OpenEdX).

Activity development using HTML and Javascript.

### **Teaching, supervision and CPD**

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Computer science, engineering, and education (teaching/learning, pedagogy, learning design and learning technologies)

#### *Undergraduate teaching*

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- 1990-2000 Advanced logic, expert systems and programming methodologies for AI, using ML and C
- 1992-1996 Object oriented design and programming.
- 2016 -2018 BSc. & MSc. IoT sessions and Labs, QMUL
- 2015 - Guest Lecturer, Birkbeck. Theory, methods, and techniques used for the design of interactive systems: Collaborative UX design methods for designing interactive systems, BSc.

#### *Postgraduate teaching*

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- 1992-2002 Logic for knowledge representation and distributed artificial intelligence.
- 1992-2008 Supervision of final year degree projects and MSc projects, includes intern projects as part of my Role in Motorola.
- 2013 Guest lecturer, IOE, MBA, Managing Teaching Research: Delivered ‘Modelling Teaching Costs’ (case-study using role play technique was used).

- 2013-2016 Learning Technologies Joint LT Masters between Birkbeck and UCL/IOE. Research methods session on Design-based and applied Methods for understanding UX and HCI factors.
- 2015-2017 Adjunct Professor at the IE University for Master in Design for Work, Retail and Learning Environments IE School of Architecture and Design IE University Spain
- 2015-2017 Designed and delivered two Modules: Contemporary Pedagogy and Technology and Pedagogy (a blended learning course).
- 2015 Guest lecturer, University of Wolverhampton. Session on the Academic and Employability Skills for Computer Science for undergraduate students. Delivered an introduction to Internet of Things.
- 2016 Guest lecturer, Hot Seat Tutorial on design & design processes, Aarhus University, Denmark
- 2016 MSc. Conversion module online electronics and coding for STEM students, QMUL
- 2016 MSc. Web and Mobile, Web design and development for mobile applications (Design, wireframes, JS, HTML5, CSS, PHP, SQL), Northumbria University London Campus
- 2016- 2018 MSc. Business with, Delivering modules in Core Competencies in Business Intelligence – Business and Data analytics (tools Excel, SAS, SPSS) and Decision making, project management and data visualization, Research Methods (Quantitative and Qualitative) Employability skills and Academic writing, Dissertation supervision.
- 2016- 2018 MSc. Business with Advanced practice London Campus, Northumbria University: Business Clinic, Consultancy Projects and Internships with industry
- 2018- MSc. Web and Mobile, IoT (Internet of Things) Module (module design, assessment, course materials with hands-on development of hardware, software and data collection and analysis including ethical and social challenges) Northumbria University London Campus

#### *Continuing professional development (CPD) for teachers*

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CPD both online and face-to-face workshops using design-based methods and peer review techniques to facilitate in the understanding and knowledge exchange about learning design both practice and theory. The workshops provide the students with hands-on experience of developing courses for face-to-face, blended and online learning.

- 2015 UCL/IOE funded by Sutton Trust. CPD for teachers to support Teaching and Learning activities for widening participation and social mobility.
- 2013-2014 FUSION (STEAM) Commissioned by Creative Skillset to deliver a two day intensive workshop for tutors, lecturers and training providers involved in the teaching of CGI, Graphics, Animation and VFX skills. To develop the intermix of creative practice, STEM and entrepreneurial skills into their curriculum content and delivery structures.
- 2014 Supervision of Master student projects (Recent Erasmus+ life long learning). UCL/IOE
- Sept 2016 Design of creativity and Computational Thinking online learning open access course for learning about general problem solving and computer science

#### *Ph.D. supervision*

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Active role in supervising, guiding and advising student projects at B.Sc., M.Sc. and Ph.D. levels.

- 2001–2005 Joint Supervisor with Professor Stefano A. Cerri. A. Gouaïch. Title Movement, Interaction, Calculation as Primitives for Everywhere and Anytime Computing. Ph.D. thesis, Université Montpellier II, Montpellier, France.
- 2005 External Ph.D. examiner for J. J. Tan, Title: Adaptive Management and Interoperability for Securing Semantic Open Services, Queen Mary, University of London

2017-2020 Joint Supervisor with Dr Stefan Poslad, Designing IoT systems to support Citizen Science engagement Queen Mary, University of London.

## **Applied Research, Community and IT/CS skills**

### **Education impact**

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Mixed methods and instruments for impact evaluation of learning environments, design, tools, and practice.

2013-2014 Leadership role in Building Community Knowledge Project impact evaluation study, and key contributor to tools and methods (peer feedback) development.

2014-2015 Leadership mixed methods data analysis of TATE/KHAN project for online learning

2015-2016 Design and application of evaluation frameworks for STEM and IoT learning experiences for scaling up and widening participation

### **User modelling, UX design and user studies**

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Designs of models, tools and instruments to design and evaluate user experiences in diverse communities

(large-scale, such as, communities of practice, communities of interest):

Case-based models, user profiles and user models (privacy policies, adaptive applications, learning design tools, context-aware systems)

UX design, storyboarding and wireframes/mock-ups: Balsamiq, Storyboard tools, Pencil and design of personas/case studies, survey tools (i.e. survey monkey)

User studies and evaluation: Small to large scale studies using both qualitative and quantitative techniques, semi-structured interviews, analytic tools, surveys and value creation stories for deep insights (impact). Includes the design of evaluation frameworks and design-based (participatory) methods to provide diverse factors and agile/incremental techniques, SPSS

Web-design/development tools: HTML5, CSS, JS and PhP, Bootcamp and wordpress.

### **Artificial intelligence (AI)**

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Design and development skills in AI tools and environments including this includes Intelligent distributed systems and inferencing systems, Knowledge models and communities. Applied examples of Ontologies (protégé) and development of inferencing systems (JESS – java-based expert system shell) and jOWL (JS engine that aligns with OWL implementations to run in the browsers).

### **Coding skills and data analytics**

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Programming languages range from classic logic-based languages (Prolog, CLIPS/JESS –OPS5 engine design/fact driven), to functional languages (LISP) to procedural (Java, C, processing) and script (Java Script, PHP, Python) languages.

Quantitative methods and Analytics: SPSS and SAS Enterprise

Agile project management: Agile PM and Trello

Data analytics: AWStats (bioinformatics), R(learning pathway analysis, learning designer data, MOOCs), google analytics (Bioinformatics, TATE/Khan platform, engagement/learning (MOOCs))

Quantum Computing and information systems: Design of AI error detection methods/LIQUID simulation

### **Industry IPR strategy board**

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Lead expert and computer scientist provided solutions for utilising digital intelligence in mobile applications and across distributed environments. Duties included key expert member in patent committees and a primary

reviewer for inventions related to intelligent digital solutions and mobile web solutions. As part of the IPR strategy team required evaluating standards, international business and research links and trends in the area of mobile and smart applications and services for the Internet to provide guidance about strategy, next generation digital challenges and opportunities.

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## Conferences and journals

June 2017

WSIS Global Goals workshop on transforming Education, ITU, Geneva June 2017 as part of the Geneva Learning Foundation

### Panel sessions 2016 Invitations

2016 Quantum Information Technologies workshop Bristol April 2016: Emerging Technologies and Ethics

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## Conferences and journals

- 2016- Reviewer IEEE Transaction on Learning Technologies
- 2016- Programme Committee Member ICALT (2016)
- 2015 – 2018 Technical Reviewer, AIED
- 2012 – 2016 Technical Reviewer Computing and Education Journal
- 2012 – 2018 Programme Committee Member for Intelligent Tutoring Systems (ITS)
- 2007 Programme Committee Member for AAMAS 2007 Industry Track
- 2007 Programme Committee Member for International Workshop on Sustaining Privacy in Autonomous Collaborative Environments (SPACE 2007)
- 2007 Programme Committee Member for Mobile Services and Ontologies Workshop (MoSO 2007)
- 2006 Programme Committee Member for Privacy and Security in Agent-based Collaborative Environments Workshop
- Programme Committee Member for Mobile Services and Ontologies Workshop (MoSO 2006)
- Programme Committee Member for Sixth International Workshop on Trust, Privacy, Deception, and Fraud in Agent Societies
- 2004 – 2012 Technical Reviewer IEEE Internet Computing
- 2003 Programme Committee Member for Agentcities: Challenges in Open Agent Environments
- 2002 Workshop organiser for Ubiquitous Agents on embedded, wearable, and mobile devices
- 2002 Programme Committee Member for Agentcities: Challenges in Open Agent Environments
- 2001 Technical Programme Committee Member for IEEE ICC Symposium on Global Service Portability

## Industry achievements

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### Standards Activity

- 1996 – 2000 Actively participated and contributed to the FIPA (Foundation of Intelligent Physical Agents) Standards taking the results from EU project KIMASC (ACTS ) and FACTS (ACTS) on personalisation and user modelling agents to provide inputs and results for the Human Agent



Interaction Group. This included user studies to understand the users concerns about autonomous agents working on the user behalf.

2000 – 2004 Leadership and contribution to the Ontologies working group (FIPA), driving policy-based approach to design of domains and service interoperability. Leadership and contributions to the security working group about user privacy and policy models.

2006 – 2008 W3C workshop on privacy and policies.

## **Patents Filed and Issued**

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### **11 Patents in design engineering filed while working at Motorola.**

- 2006 [1] A mechanism to enhance and automate personalized communication delivery and exchange  
[2] A mechanism to generate personalized events and content profiles to assist in automatically managing personal content and events
- 2005 [3] CHARLTON PATRICIA WO2007040696 A2 CONTENT ACCESS RIGHTS MANAGEMENT, Published 2007
- 2004 [4] WATSON CRAIG; RIBIERE MYRIAM; CHARLTON PATRICIA MARY; REID ANGUS WO2006065636 A2AN ALERT MANAGEMENT APPARATUS AND A METHOD OF ALERT MANAGEMENT THEREFOR, Published 2007  
[5] WATSON CRAIG; RIBIERE MYRIAM; CHARLTON PATRICIA MARY; REID ANGUS WO2006065637 A2, METHOD AND APPARATUS FOR ALERT MANAGEMENT  
[6] CHARLTON PATRICIA MARY; LHUILLIER NICOLAS; PICAULT JEROME WO2006110495 A3 APPARATUS AND METHOD FOR USER COMMUNICATION IN A COMMUNICATION SYSTEM, Published 2007  
[7] CHARLTON PATRICIA MARY; BOUZID MAKRAM; RIBIERE MYRIAM WO2006105003 A3 KNOWLEDGE PROCESSING APPARATUS AND METHOD, Published 2007
- 2003 [8] RIBIERE MYRIAM; BOUZID MAKRAM; CHARLTON PATRICIA, WO2006044664 A3, APPARATUS AND METHOD FOR DETERMINING A USER PREFERENCE, Published 2006  
[9] BOUZID MAKRAM; RIBIERE MYRIAM; CHARLTON PATRICIA MARY WO2006057792 A2, METHOD AND APPARATUS FOR ACCESSING A SERVICE, Published 2006, Granted 2007
- 2002 [10] Gouaich, Abdelkader, Camuzard, Frédéric Charlton, Patricia, No: EP1324237 A1 “Selecting and communicating offers of services or products in response to an nterrogation”, Published 2003  
[11] Ronie Taib, Nicholas Lhuillier, Patricia Charlton, United States Patent 6747685 Conference calling

## **Publications**

### **2019**

P Charlton and S. Poslad, ‘Engaging with computer science when solving tangible problems’ CEP 2019, ACM

## 2018

Diana Laurillard, Eileen Kennedy, Patricia Charlton, Joanna Wild & Dionis Dimakopoulos, “Using technology to develop teachers as designers of TEL: evaluating the Learning Designer”, *British Journal of Educational Technology*, May 2018

Patricia Charlton, Adamantios Koumpis, Christos Kouroupetroglou and Muriel Grenon “Powerful metaphors for ‘tangible’ experiential knowledge building” , *Human Computer Communications and Internet of Things, Journal of Multimodal Technology and Interaction*, (2018)

D Zlatopolski & M Filippov, Editor, P Charlton “Basics in Programming in Python”, Book: Publisher Creative Digital Solutions, part of Ahead of the curve series, 2018

## 2017

P. Charlton, H. Baker., J. Claessens, and J. Wild, “WEARABLE, TEACHABLE AND LEARNABLE INTERNET OF THINGS: THE MICRO BIT PROJECT”, *Creative Digital Solutions, Ahead of the curve series*, 2017, <https://wp.me/p4XAXR-76>

## 2016

Patricia Charlton, Katerina Avramides, "Knowledge Construction in Computer Science and Engineering when Learning Through Making", *IEEE Transactions on Learning Technologies*, vol. 9, no. , pp. 379-390, Oct.-Dec. 2016, doi:10.1109/TLT.2016.2627567

Patricia Charlton, Anne Preston, Charalampos Karagiannidis, Christos Kouroupetroglou, Muriel Grenon, Adamantios Koumpis, “Use of the Curiosity Cabinet metaphor to support inclusive learning” 6th International Conference on Software Development and Technologies for Enhancing Accessibility and Fighting Infoexclusion (DSAI 2016)

P. Charlton and S. Poslad, ‘A Sharable Wearable IoT Community Application’ 12th International Conference on Intelligent Environments, 2016, IEEE,

P. Charlton and R. Toft Nørgård “Convention be damned – let the learning Emerge: The Power of learning with” *Ethnography and Education Conference Oxford 2016*.

Luckin, Rosemary & Cukurova, Mutlu & Mavrikis, Manolis & Avramides, Katerina & Charlton, Patricia. (2016). *The importance of the Learning Sciences for Teaching and Learning through the Internet of Things*.

## 2015

Patricia Charlton, “Creating a collaborative learning experience for future innovators”, *Wireless Q, Quarter 3, 2015, NORDIC*

Patricia Charlton, Sokratis Karkalas and Manolis Mavrikis. “Designing a mediation vocabulary for authoring learning analytics”, *Knowledge Engineering and Ontology Development (KEOD 2015)*

Sokratis Karkalas, Patricia Charlton Manolis Mavrikis. *Turning Web Content into Learning Content, A Lightweight Integration and Interoperability Technique*, *Knowledge Engineering and Ontology Development (KEOD 2015)*

E. Kennedy, D. Laurillard, B. Horan & P. Charlton, “Making meaningful decisions about time, workload and pedagogy in the digital age: the Course Resource Appraisal Model” *Special issue of Distance Education Journal*, (2015)

Sokratis Karkalas, Christian Bokhove, Patricia Charlton Manolis Mavrikis. *Towards Configurable Learning Analytics for Constructionist Mathematical e-Books (AIED 2015)*

## 2014

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Bokhove, C, Jones, K, Charlton, P, Mavrikis, M and Geraniou, E (2014) Authoring your own creative, electronic book for mathematics: the MC-squared project. In, Keith Jones, Christian Bokhove, Geoffrey Howson and Lianghuo Fan (eds.) Proceedings of the International Conference on Mathematics Textbook Research and Development (ICMT-2014). Southampton, GB, University of Southampton, 547-552.

Bokhove, Christian, Jones, Keith, Mavrikis, Manolis, Geraniou, Eirini and Charlton, Patricia (2014) Co-designing electronic books: boundary objects for social creativity. In, Keith Jones, Christian Bokhove, Geoffrey Howson and Lianghuo Fan (eds.) Proceedings of the International Conference on Mathematics Textbook Research and Development (ICMT-2014). International Conference on Mathematics Textbook Research and Development Southampton, GB, University of Southampton, 167-172.

## 2013

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Charlton, P, The theory and practice of AI in action: Comparing the use of AI approaches when designing solutions for industry and education, BCS, Real AI, October 2013

P. Charlton, M. Manolis, D. Katsifili. "The Potential of Learning Analytics and Big data", in Adriane, 2013, Zanani, E, Charlton P., Laurillard, D., Creating and Sharing Information Literacy Learning Designs, ECIL 2013  
Charlton P., "Creativity and Learning Through UX Thinking and Design", HCID 2013

Davies P, and Charlton P, Arduinos and lilypads, a student led workshop, ECIS Workshop, March 2013

## 2012

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P. Charlton and R. Luckin, Time to re-load? Computational Thinking and Computer Science in Schools, What the research says briefing report.

[http://www.lkl.ac.uk/cms/files/jce/articles/time\\_to\\_reloadwhattheresearchsaysbriefing27april2012.pdf](http://www.lkl.ac.uk/cms/files/jce/articles/time_to_reloadwhattheresearchsaysbriefing27april2012.pdf)

Charlton P., Magoulas G., Laurillard, D. Enabling Creative Learning Design through Semantic Web Technologies, Journal of Technology, Pedagogy and Education July 2012

## 2011

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Laurillard, D., Charlton, P., Craft, B. Dimakopoulos, D., Ljubojevic, D., Magoulas, G., Masterman, E., Pujadas, R., Whitley, E.A., & Whittlestone, K. A constructionist learning environment for teachers to model learning designs. JCAL.

Charlton P. & Magoulas G.D. (2011). Next Generation Environments for Context-aware Learning Design. In Smart Innovation, Systems and Technologies. Springer, 2011

Charlton P. and Magoulas G.D Context-aware Framework for Supporting Personalisation and Adaptation in Creation of Learning Designs: In Intelligent and Adaptive Learning Systems: Technology Enhanced Support for Learners and Teachers: Ed Graf & Kinshuk, IGI

R. Pujadas, C. Roder, E.A. Whitley and P. Charlton, Teaching innovation and technology: An analysis of a Learning Design Support Environment, CAL 2011

Diana Laurillard, Dejan Ljubojevic, Patricia Charlton, Marion Manton, George Magoulas, Joanna Wild, Liz Masterman: Representing and sharing learning designs: A design support environment, Workshop at ALT-C 2011: 18th International Conference of the Association for Learning Technology, Leeds 6-8 September 2011.

## 2010

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Charlton P. and Magoulas G.D. (2010), "Autonomic Computing and Ontologies to Enable Context-aware Learning Design". In Proceedings of the 22nd IEEE International Conference on Tools with Artificial Intelligence, October 27-29, 2010, Arras, France.

Charlton, P., Magoulas, G., (2010), "Self-configurable Framework for enabling Context-aware Learning Design". In Proceedings of the IEEE International Conference on Intelligent Systems, pp. 1-6, 2010.

Laurillard, D., Masterman, L., Magoulas, G., Charlton, P., Manton, M., Ljubojevic, D., Craft, B. & Pujadas, R. "Supporting innovative teaching with an intelligent collaborative design environment." Workshop at ALT-C 2010: 17th International Conference of the Association for Learning Technology, Nottingham, 7-9 September 2010.

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## 2009

Charlton P., Magoulas G.D., and Laurillard D. (2009), Designing for Learning with Theory and Practice in Mind. In Proceedings of the Workshop "Enabling creative learning design: how HCI, User Modelling and Human Factors help", part of AIED 2009 Conference, pp. 52-61, 2009

Charlton P., & Poslad S. Intelligent Systems, Chapter 8, Ubiquitous Computing: Smart Devices, Environments And Interactions, 2009, Wiley, 978-0-470-03560

Charlton P., & Poslad S. Intelligent System Interaction, Chapter 9, Ubiquitous Computing: Smart Devices, Environments And Interactions, 2009, Wiley, 978-0-470-03560

Charlton, P, Magoulas, G, and Laurillard, D., Pedagogy meets Ontologies: Knowledge Representation for Creative Learning Design, ALT-C, 2009

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## 2006

P. Charlton and J. Teh "A self-governance approach to supporting privacy preference-based content sharing in distributed environments", the International Transactions on Systems Science and Applications (ITSSA) Journal (2006).

P. Charlton and J. Teh, "The design of 'intelligence' for the management of personal multimedia content", the international conference on Semantics And digital Media Technology (SAMT 2006).

Patricia Charlton and Jonathan Teh, "Supporting the users' privacy preferences when sharing personal content" published by W3C, Workshop on Languages for Privacy Policy Negotiation and Semantics-Driven Enforcement, held in Ispra, Italy on 17 and 18 October 2006.

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## 2004

Steven Willmott, Simon G. Thompson, David Bonnefoy, Patricia Charlton, Ion Constantinescu, Jonathan Dale, Tianning Zhang: Agent Based Dynamic Service Synthesis in Large-Scale Open Environments: Experiences from the Agentcities Test-bed. AAMAS 2004: 1318-1319

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## 2003

Patricia Charlton, Myriam Ribière: Rich service description for a smarter lifestyle. AAMAS 2003: 512-519

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