

# Panagiotis D. Ritsos

MEng PhD Essex, AFHEA

## *Academic Profile*

Senior Lecturer in the Department of Computer Science, Faculty of Science and Engineering of the University of Chester, UK and Associate Fellow of the HEA. Research interests and expertise in *Information Visualization*, *Visual Analytics*, *Wearable Computing*, *Mixed Reality* and *Virtual Reality*, as evidenced by publications and career experience. Skills complemented by experience in *Medical Visualization*, *Virtual Worlds* and *User Experience Evaluation*. Currently pursuing research on *Immersive Analytics* and *Personal Learning Visualization*.

## *Education*

10/2000 – 03/2006 **PhD, Electronic Systems Engineering**

*School of Computer Science and Electronic Engineering, University of Essex*

Thesis Title: “*Architectures for Untethered Augmented Reality using Wearable Computers*”. [11, 12, 28, 31]

Supervisor: Dr. Adrian F. Clark

10/1996 – 07/2000 **MEng, Electronic Systems Engineering**

*School of Computer Science and Electronic Engineering, University of Essex*

06/2015 – present **Postgraduate Certificate in Learning and Teaching in Higher Education (PGCertLTHE)**  
*Learning and Teaching Institute, University of Chester*

09/2014 – 06/2015 **Postgraduate Certificate in Higher Education (PGCertHE) - AFHEA Status**  
*School of Education, Bangor University*

## *Academic Experience*

06/2015 – present **Senior Lecturer**

*Department of Computer Science, University of Chester*

Themes & Projects:	<i>Visualizing and Reporting Data-Quality.</i> (Publications under review.)	(01/2016–present)
-	<i>Data Visualization for Digital Humanities.</i> (Publications under preparation.)	(02/2016–present)
-	<i>Immersive Analytics.</i> (Publications under preparation.)	(06/2015–present)
-	<i>Medical Virtual &amp; Mixed Reality Simulators.</i> [7, 23, 24]	(06/2015–present)
-	<i>Sketching Methodologies for Teaching of InfoVis and Visual Analytics.</i> [1, 21]	(06/2015–present)

06/2011 – 05/2015 **Research Officer**

*School of Computer Science, Bangor University*

Themes & Projects:	<i>Contextual Visualization for Network Security.</i> [8, 22]	(01/2015–05/2015)
-	<i>Beyond-the-desktop Multisensory Visualization.</i> [3, 6, 15, 16, 27, 29]	(11/2013–05/2015)
-	<i>EVIVA – Evaluating the Education of Interpreters and their Clients through Virtual Learning Activities</i> (EU LLP). [18]	(01/2013–12/2014)
-	<i>Community-driven Handheld AR for Cultural Heritage:</i> [2, 17]	(04/2014–10/2014)
-	<i>Visualization for Oceanography</i> [4, 26]	(08/2013–06/2014)
-	<i>IVY – Interpreting in Virtual Reality</i> (EU LLP). [5, 10, 20]	(06/2011–12/2012)

## *Teaching Experience*

### **University of Chester**

2015 – present Managing a Web-based Environment (*Lecturer & Lab Instructor*)

### **Bangor University**

2014/15 Web Technologies (*Lecturer & Lab Instructor*)

2014/15 Graphics & Web Design (*Lecturer & Lab Instructor*)

2013/14 Technologies for Internet Systems (*Lecturer, together with Jonathan C. Roberts*)

2013/14 Unix Operation System (*Lab Instructor*)

2013/14 Computer and Network Security (*Lab Instructor*)

2013/14 Computer Vision (*Lab Instructor*)

2012 – 2015 Imperative programming (*Lab Instructor*)

### **Intracom Telecom S.A.**

2010 ActionStreamer System Administrator Training (*Lead Course Instructor*)

2010 Hellas OnLine (HOL) Mediation System Administrator Training (*Lead Course Instructor*)

### **University of Essex**

2000 – 2005 Analogue/Digital Design and Digital Signal Processing - (CAD Lab Instructor)

2000 – 2003 Analogue/Digital Design (H/W Lab Instructor)

2002 – 2004 Computer Engineering (Handel C / ARM Lab Instructor)

## *Supervision Experience*

### **PhD Supervision**

2015 – present Pete Butcher – ‘*Beyond-the-desktop Data Visualization*’

### **Master’s Dissertation Supervision**

2014/15 Adam J. Kenworthy – “*Investigating Augmented Reality with the Oculus Rift*” (with Prof Nigel John)

### **Bachelor’s Dissertation Supervision**

2015 – present Andrew Butler (BSc) – “*Prototyping a Smartwatch Application for Students at Thornton Science Park*”

2015 – present Christopher Edman (BSc) – “*Visualizing the Thornton Science Park using an AR Magic Lens*”

2015 – present Matthew Williams (BSc) – “*Developing the Application of 3D Photogrammetry using Aerial Platforms*”

2015 – present Liam Kelly (BSc) – “*The effect of SEO on local SMEs*”

### **Other Supervision**

2012 – 2015 Software Hut Group Projects (BSc Level 5), six groups of four<sup>+</sup> students

## *Professional Experience*

06/2007 – 05/2011 **Software Engineer** Intracom Telecom S.A., Greece

01/2006 – 12/2010 **External IT Consultant** OxDesign Ltd, Greece

05/2006 – 05/2007 **Private (OR-1)** Hellenic Army Signal Corps, Greece

09/2004 – 12/2005 **IT Consultant** European Profiles S.A., Greece

## *Grants and Funding*

- 2015 – present Higher Education Innovation Funding (HEIF) Knowledge Transfer Funding – “*IPoP - Image Projection onto Patients*” – Co-Investigator
- 2012 – 2014 EU Lifelong Learning Programme – “*Evaluating the Education of Interpreters and their Clients through Virtual Learning Activities*”, Project 531140-LLP-1-2012-1-UK-KA3-KA3MP – Named Researcher
- 2000 – 2003 Engineering and Physical Sciences Research Council (EPSRC) – Fees-only Doctoral Training Award
- 2000 – 2003 University of Essex – Teaching Assistant/Laboratory Demonstrator Scholarship

## *Reviewing*

- 2016 IEEE Conference on Visual Analytics Science and Technology (VAST)
- 2016 ACM SIGCHI Conference on Human Factors in Computing Systems (CHI)
- 2016 Eurographics Computer Graphics Forum (CGF)
- 2016 International Journal of Human-Computer Studies (Elsevier)
- 2016 Annual Conference of the European Association for Computer Graphics (Eurographics)
- 2016 Eurographics Conference on Visualization (EuroVis)
- 2015 – 2016 Eurographics Eurovis Workshop on Visual Analytics (EuroVA)
- 2013 – 2016 IEEE International Symposium on Mixed and Augmented Reality (ISMAR)
- 2015 Eurographics Workshop on Visual Computing for Biology and Medicine (VCBM)
- 2015 IEEE Symposium on 3D User Interfaces (3DUI)
- 2015 Computers & Education (Elsevier)
- 2014 IEEE Transactions in Human-Machine Systems
- 2014 Artificial Life and Intelligent Agents Symposium (ALIA)

## *Memberships*

- 2015 – present Associate Fellow of the Higher Education Academy
- 2014 – present IEEE Technical Committee on Visualization and Graphics (VGTC)
- 2012 – present W3C Augmented Reality Community Group
- 2007 – present Institute of Electrical and Electronics Engineers (IEEE)
- 2002 – present Technical Chamber of Greece (TEE)
- 2011 – 2015 Research Institute of Visual Computing (RIVIC), Wales

## *Committees*

- 2016 Faculty of Science and Engineering Research Ethics Committee (FSE-REC), University of Chester
- 2016 Program Committee (STAR) - Annual Conference of the European Association for Computer Graphics
- 2015 – 2016 Program Committee - Eurographics Eurovis Workshop on Visual Analytics (EuroVA)
- 2014 – 2016 Program Committee - Artificial Life and Intelligent Agents Symposium (ALIA)
- 2012 Organising Committee - Virtual Learning Technologies (VLT)
- 2008 Organising Committee - International Conference on Digital Interactive Media in Entertainment and Arts (DIMEA)
- 1999/00 Student Representative, Staff-Student Liaison Committee, Department of Electronic Systems Engineering, University of Essex, UK

## Publications

- Journals:
- [1] J.C. Roberts, C. Headleand, and **P.D. Ritsos**, "Sketching designs using the Five Design-Sheet methodology", *Transactions on Visualization and Computer Graphics (TVCG)*, IEEE, 22(1), pp.419-428, Jan. 2016
  - [2] H.C. Miles, A.T. Wilson, F. Labrosse, B. Tiddeman, **P.D. Ritsos**, J.W. Mearman, S. Griffiths, B. Edwards, K. Möller, R. Karl, and J.C. Roberts, "Alternative Representations of 3D-Reconstructed Heritage Data", *Journal on Computing and Cultural Heritage (JOCCH)*, ACM, Vol.9, pp.4:1-4:18, 2015
  - [3] J.C. Roberts, **P.D. Ritsos**, S.K. Badam, D. Brodbeck, J. Kennedy, and N. Elmquist, "Visualization Beyond the Desktop -The Next Big Thing", *Computer Graphics and Applications (CG&A)*, IEEE, Vol.34, No.6, pp. 26–34, Nov.-Dec. 2014. (*\* invited for presentation in IEEE VIS 2015*)
  - [4] R.L.S.F. George, P.R. Robins, A.G. Davis, **P.D. Ritsos**, and J.C. Roberts, "Interactive visual analytics of Hydrodynamic Flux for the Coastal zone", *Environmental Earth Sciences*, pp. 1–14, May 2014.
  - [5] **P.D. Ritsos**, R. Gittins, S. Braun, C. Slater, and J.C. Roberts, "Training Interpreters Using Virtual Worlds", *LNCS Transactions on Computational Science XVIII*, vol. 7848, pp. 21–40, May 2013.
  - [6] S.A. Panéels, **P.D. Ritsos**, P.J. Rodgers, and J.C. Roberts, "Prototyping 3D haptic data visualizations", *Computers & Graphics*, vol. 37, Issue 3, pp. 179–192, May 2013.
- Conferences:
- [refereed]
- [7] C.J. Headleand, T. Day, S.R. Pop, **P.D. Ritsos** and N.W. John, "A Cost-Effective Virtual Environment for Simulating and Training Powered Wheelchairs Manoeuvres", *Proceedings of the NextMed/Medicine Meets Virtual Reality (MMVR) 22*, Los Angeles, CA, USA, Apr. 2016
  - [8] C.C. Gray, **P.D. Ritsos** and J.C. Roberts, "Contextual Network Navigation to provide Situational Awareness for Network Administrators", *Proceedings of the IEEE Symposium on Visualization for Cyber Security (VizSec 2015)*, Chicago, IL, USA, Oct. 2015
  - [9] J.C. Roberts, L. ap Cenydd, **P.D. Ritsos**, R.L.S.F. George, W. Teahan, and R. Walker, "Visual Analytics with Storyboarding to Engender Multivocality and Comprehension of Microblog Data for Crisis Management", *In proceedings of IST-116 Symposium on Visual Analytics*, Shrivenham, UK, 28–29 Oct. 2013.
  - [10] **P.D. Ritsos**, R. Gittins, S. Braun, C. Slater, and J.C. Roberts, "Using Virtual Reality for Interpreter-mediated Communication and Training", *In proceedings of Cyberworlds(CW), 2012 International Conference on*, pp. 191–198, Darmstadt, Germany, 25–27 Sep. 2012.
  - [11] **P.D. Ritsos**, D.J. Johnston, C. Clark, and A.F. Clark, "Engineering an Augmented Reality Tour Guide", *In proceedings of IEE Eurowearable '03*, pp. 119–124, Birmingham, UK, 4–5 Sep. 2003.
  - [12] **P.D. Ritsos**, D.J. Johnston, C. Clark, and A.F. Clark, "Mobile Augmented Reality Archaeological Reconstruction", *In proceedings of: Unesco Conference on Architecture, Tourism and World Heritage*, Beijing, China, Oct. 2002.
- Workshops:
- [refereed]
- [13] J.C. Roberts, C. Headleand, D. Perkins and **P.D. Ritsos**, "Personal Visualisation for Learning", In C. Perin, A. Thudt, M. Troy, W. Willett and S. Carpendale, editors, *Proceedings of the Personal Visualization: Exploring Data in Everyday Life Workshop, IEEE Conference on Visualization (VIS 2015)*, Chicago, IL, USA, Oct. 2015
  - [14] C.H. Headleand, L. Priddy, **P.D. Ritsos**, L. ap Cenydd, J.C. Roberts and W. Teahan, "Anthropomorphisation of Software Agents as a Persuasive Tool", In J. Nicholson, L. Coventry, C. Elsden, A. McNeil and P. Briggs, editors, *Proceedings of the Understanding Persuasion: HCI as a Medium for Persuasion Workshop, British HCI*, Lincoln, UK, Jul. 2015
  - [15] **P.D. Ritsos**, J.W. Mearman, A. Vande Moere and J.C. Roberts, "Sewn with Ariadne's Thread - Visualizations for Wearable & Ubiquitous Computing", In Y. Jansen, P. Isenberg, J. Dykes, S. Carpendale, and D. Keefe, editors, *Proceedings of the Death of the Desktop Workshop, IEEE Conference on Visualization (VIS 2014)*, Paris, Nov. 2014
  - [16] J.C. Roberts, J.W. Mearman and **P.D. Ritsos**, "The desktop is dead, long live the desktop! – Towards a multisensory desktop for visualization", In Y. Jansen, P. Isenberg, J. Dykes, S. Carpendale, and D. Keefe, editors, *Proceedings of the Death of the Desktop Workshop, IEEE Conference on Visualization (VIS 2014)*, Paris, Nov. 2014
  - [17] **P.D. Ritsos**, A.T. Wilson, H.C. Miles, B. Tiddeman, F. Labrosse, and J.C. Roberts, "Community-driven generation of 3D and augmented web content for archaeology", In R. Klein and P. Santos, editors, *12th Workshop on Graphics and Cultural Heritage (GCH)*, Eurographics Association, Darmstadt, Germany, pp. 25–28, Oct. 2014.
  - [18] **P.D. Ritsos** and J.C. Roberts, "Towards more Visual Analytics in Learning Analytics", In Margit Pohl and Jonathan C. Roberts, editors, *Proceedings of the Fifth EuroVis Workshop on Visual Analytics (EuroVA)*, Eurographics Association, Swansea, UK, 9–10 Jun. 2014.

- Book Chapters:
- [19] **P.D. Ritsos**, "Mixed Reality - A paradigm for perceiving synthetic spaces", in Reiche, M. and Gehmann, U. (eds.) *Real Virtuality*, Transcript-Verlag Bielefeld, pp. 283–310, 2014.
  - [20] S. Braun, C. Slater, R. Gittins, **P.D. Ritsos**, and J.C. Roberts, "Interpreting in Virtual Reality: designing and developing a 3D virtual world to prepare interpreters and their clients for professional practice", in D. Kiraly, S. Hansen-Schirra and K. Maksymski (eds). *New Prospects for Educating Language Mediators*, Gunter Narr Verlag, pp. 93–120, 2013.
- Books:
- [21] J.C. Roberts, C.J. Headleand, and **P.D. Ritsos**, *Think, Sketch, Plan: The FDS Methodology*, Springer. (to be published)
- Posters:
- [22] C.C. Gray, J.C. Roberts and **P.D. Ritsos**, "Where Can I Go From Here? Drawing Contextual Navigation Maps of the London Underground", *Posters at the IEEE Conference on Visualization (IEEE VIS)*, Chicago, USA, Nov. 2015.
  - [23] C.J. Headleand, T. Day, S.R. Pop, **P.D. Ritsos** and N.W. John, "Challenges and Technologies for Low Cost Wheelchair Simulation", *Fifth Eurographics Workshop on Visual Computing for Biology and Medicine (VCBM 2015)*, Chester, UK, Sep. 2015
  - [24] **P.D. Ritsos**, M.R. Edwards, I.S. Shergill and N.W. John, "A Haptics-enabled Simulator for Transperineal Ultrasound-Guided Biopsy", *Fifth Eurographics Workshop on Visual Computing for Biology and Medicine (VCBM 2015)*, Chester, UK, Sep. 2015
  - [25] J.C. Roberts, R. Walker, L. Roberts, R.S. Laramee and **P.D. Ritsos**, "Exploratory Visualization through Copy, Cut and Paste", *Posters at the IEEE Conference on Visualization (IEEE VIS)*, Paris, France, Nov. 2014.
  - [26] R.L.S.F. George, **P.D. Ritsos** and J.C. Roberts, "Interactive Oceanographic Visualization using spatially-aggregated Parallel Coordinate Plots", *Posters of the Eurographics Conference on Visualization (EuroVis)*, Swansea, UK, Jun. 2014.
  - [27] **P.D. Ritsos**, S.A. Panéels, P.J. Rodgers, and J.C. Roberts, "Towards a Formalized Process for Creating Haptic Data Visualizations", *Posters at the IEEE Conference on Visualization (IEEE VIS)*, Atlanta, USA, Oct. 2013.
  - [28] **P.D. Ritsos**, D.J. Johnston, C. Clark, and A.F. Clark, Mobile "Augmented Reality Archaeological Reconstruction", *Postgraduate day*, Departments of Electronic Systems Engineering and Computer Science, University of Essex, Colchester, UK, Mar. 2003.
- Conferences:
- [29] **P.D. Ritsos**, N.W. John, and J.C. Roberts, "Standards in Augmented Reality - Towards Prototyping Haptic Medical AR", *8<sup>th</sup> International Meeting on AR Standards*, Barcelona, Spain, Feb. 2013.
  - [30] **P.D. Ritsos**, D.P. Ritsos, and A. Gougiulis, "Standards for Augmented Reality: a User Experience perspective", *2<sup>nd</sup> International Meeting on AR Standards*, Barcelona, Spain, Feb. 2011.
- Thesis:
- [31] **P.D. Ritsos**, *Architectures for Untethered Augmented Reality Using Wearable Computers*, PhD thesis, University of Essex, 2006.

## *Presentations and Seminars*

- Presentations:
- "Visualization Beyond the Desktop - the next big thing", *IEEE Conference on Visualization (VIS 2015), Invited CG&A papers*, Chicago, Illinois, USA, Oct. 2015.
  - "Visualization Beyond the Desktop - the next big thing", *Research Seminar, University of Chester*, Chester, UK, Oct. 2015
  - "Sewn with Ariadne's Thread - Visualizations for Wearable & Ubiquitous Computing", *Death of the Desktop Workshop, IEEE Conference on Visualization (VIS 2014)*, Paris, France, Nov. 2014.
  - "Towards more Visual Analytics in Learning Analytics", *Fifth EuroVis Workshop on Visual Analytics (EuroVA)*, Eurographics Association, Swansea, UK, Jun. 2013.
  - "Evaluating Interpreting in Virtual Reality", *New Computer Technologies - Animation and Games Workshop*, Bangor University, UK, May 2013.
  - "Excitement of VisWeek 2013", *Visualization & Medical Graphics Group Seminars*, Bangor University, UK, Nov. 2013.
  - "Haptic Data Visualization", *Visualization & Medical Graphics Group Seminars*, Bangor University, UK, Oct. 2013.

- "WeARable Computing - From the Qing Dynasty to Project Glass: Prototypes, Myths, Confusion and Lots of Wires...", *Visualization & Medical Graphics Group Seminars*, Bangor University, UK, Mar. 2013.
- "Project IVY – Interpreting in Virtual Reality", *IVY Dissemination Symposium: Exploiting Emerging Technologies to Prepare Interpreters and their Clients for Professional Practice*, Kia Oval, London, UK, Nov. 2012.
- "Project IVY – Interpreting in Virtual Reality", *Virtual Learning Technologies 2012*, Bangor University, UK, Oct. 2012.
- "Interpreting in Virtual Reality", *Virtual Worlds Education Forum*, Staffordshire University, UK, Mar. 2012.
- "Project IVY – Interpreting in Virtual Reality – Virtual Environment Development", *Creating Second Lives 2011: Blurring Boundaries*, Bangor University, UK, Sep. 2011.
- "Project IVY – Interpreting in Virtual Reality – Virtual Environment Development", *Visualization and Medical Graphics Group Seminars*, Bangor University, UK, Sep. 2011.

Vocational Seminars: **P.D. Ritsos**, M. Drakos, C. Vasilatos and N. Fountas, "ActionStreamer System Administrator Training", *Training Seminars*, Intracom-Telecom S.A., Athens, Greece, Jul. 2010.

- **P.D. Ritsos**, "HOL Mediation System Administrator Training", *Training Seminars*, Hellas OnLine S.A., Athens, Greece, Jul. 2010.