Abraham G. Campbell BSc PhD PgDip

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Date of Birth 22 August 1980   **Nationality** Irish/Canadian

Current Position

I have just finished a 1 and half year Post-Doc within CLARITY, a Science Foundation Ireland Centre for Science, Engineering and Technology. I am currently applying for further research funding under two EU Horizon 2020 projects **Sustain** and **RobotChick**, which will be furthering my research career into **Ubiquitous Computing, Multi-Agents systems** and **Immersive Virtual Reality / Telepresence.** My research within CLARITY examined the use of **Augmented Reality** within **Ubiquitous sensing** in a **Mobile Application.** This research also extended my previous research in using **Multi-Agent systems** to create Mixed Reality Applications that I conducted for my PhD. In pursing research into the combination of **Augmented Reality, Multi-Agent systems, Ubiquitous Computing and Immersive Virtual Reality,** I have published over a dozen peer-reviewed papers.

Qualifications

Awarded a **PhD** in Computer Science for my thesis entitled " AuRA: Defining, Developing and Evaluating Augmented Reality Agents" in September 2012. Previously, in University College Dublin, I completed a **Bachelor of Science Degree** specializing in Computer Science, in which I received a 2.1 honours degree (68.2%). Previous to my University Education, I achieved 8 honors in my leaving certificate, when I attended "St Kilian's Deutsche Schule", Dublin 14 from 1987-1999. I completed a **PG Diploma in Training and Education** in 2013 with GCD.

Specialist and Subject expert

- Specialist and Subject expert in (Published in (C) conference & (J) journal)

  - **Computer Graphics/Augmented Reality** published in **ISMAR** (C) and **IJHCI** (J)
  - **Ubiquitous Sensors & Ubiquitous Computing** published in **AMI** (C) & **AMT**(C)
  - **Mobile Application Development** published in **MoMM** (C) & **MIS** (J)
  - **Multi-Agent Systems** published in **CASA** (C) and **IVA** (C)
  - **Immersive Virtual Reality** published in **Presence**, **Virtual Reality** & **CIE** journals

- **Applications:** Eclipse, ARToolkit, MeshLab, Milkshape 3D, Blender, SVN, Audacity Photoshop, MS Office.
- **Software Engineering:** *Experience in the following Programming Languages*: **Java, Java ME , Android Development (JAVA) , C , C++, OpenGL , JAVA 3D, BASIC , Assemble language (x86), COMMON LISP, Latex , HTML**
- **Operating Systems:** Windows (100+ installs), Linux (Ubuntu) (200+ installs), Android

Past Academic Employment and Experience

Reviewer experience

Reviewer for IEEE **International Symposium on Mixed and Augmented Reality** (2011-14)
Reviewer for IEEE **Virtual Reality** (2012)
Reviewer for ACM **Journal on Computers in Entertainment** (2011/2)

Researcher Experience

CLARITY, UCD , Ireland Post-Doctoral researcher (November 2012 - June 2014**)**
I worked as **team project manager** for the **SIXTH Sensor Middleware Android deployment project** and as mentor to several PhD and final year projects throughout the school. The aim of the project was to take the existing SIXTH system and make it deployable in a mobile environment, allowing for the creation of a mobile dynamic sensor web which can be used to create Augmented Reality applications. The project completed its goal and the mobile SIXTH sensor middleware included the publishing of several papers on its development. This role included **mentoring PhD students**; these duties were expanded to include experience in **supervising PhD students** due to illness and other unforeseen circumstances. I gained experience in supervisor level activities such as paying students using Grants, aiding the students in applying for extensions to their PhDs due to medical grounds as well as reviewing thesis drafts. I also became familiar with the UCD RMS system as I was a **principle investigator** on one of the grants I received.

COBWEB, UCD, Developer and Post-Doctoral researcher, *November 2012 - June 2014*)
Within **CLARITY,** I was part of **COBWEB FP 7** project , exploring the use of Smartphone's for Citizen Science.

National Digital Research Centre, Dublin, Ireland *(September 2009-September 2010)*
I worked as a Researcher for the **FreeGaming project**. The aim of the project was to develop Augmented Reality mobile phone applications using markerless tracking using an external machine vision server. The project concluded with the creation of an AR application whose development was published in several papers.
Research Internship, Computer Science department, *UCD, Dublin (Summer 2004)*

Teaching experience

I have lectured in 7 different modules and I have been in charge of 11 courses over the last 8 years. For a detailed list please consult my **Teaching Portfolio.**

University College Dublin *(January 2014 - June 2014)*
I currently lecture **Mobile Application Development Course (Android)** *as well as conducting a guest lecture in* **COMP40300 Context Sensitive Service Delivery** *in the last two years to demo current wearable technologies.*

Griffith College Dublin *(January 2012 - May 2014)*
I lecture to Certificate, Higher Diploma and Masters students in several courses including **Foundation of Computing**, **Program and Data Structures**(in Java), **Computer Graphics** and **System Software**. I was **MSc Project Coordinator** and **project supervisor** during 2012 for the faculty .

American College Dublin *(September 2006–December 2008)*
I lectured "**Introduction to Computers**" for three semesters for psychology students and business students.

CAMARA , *Ethiopia / Kenya (July 2006,July 2007)*
I lectured a prototype **FETAC computer introduction** course to teachers and students at various colleges in both Ethiopia and Kenya. I was awarded a UCD President Award in 2008 for this work.

Laboratory Demonstrator and Teaching Assistant, UCD *(Sept. 2004 – Oct. 2012)*

Previous Grants and Pending Grant Applications

Successful Grants
Enterprise Ireland (EI funded) Grants I was directly involved with Industry partners
Touch Apps Innovation Voucher 2012 EI €5,000 (Gregory O'Hare was Principal investigator)
Brand Tactics Innovation Voucher 2013 EI €5,000 (Gregory O'Hare was Principal investigator)
SIXTH commercial Feasibility Study : 2014 EI €15,000 (I was Principal investigator)

Currently Under Review
RobotChick (**Telepresence and Robotics Project**) source of funding **Horizon 2020**
€2.5 Million , UCD part of a consortium to receive roughly €500,000 pending consortium negotiations.
Sustain (Ambient/ Ubiquitous computing environment) project source of funding **Horizon 2020**
€3 Million euro, UCD part of a consortium will receive €500,000 to pay for two postdoc employees.

Unsuccessful
HUMBLE (VR simulation) project : Source of funding Human Brain Project
Our proposal (€2.2 million) was "<u>considered above the threshold so could have accepted but unfortunately cannot be considered for funding due to the Topic funding limits. </u>"

Selected Research Publications (Full List on http://wearealldruidsnow.com)

A.G Campbell, JW Stafford, T Holz, GMP O'Hare," **Why, when and how to use augmented reality agents (AuRAs)"** **Virtual Reality** 18 (2), 139-159 2014

A.G Campbell, R Collier, M Dragone, L Gorgu, T Holz, M J. OGrady, G.M.P. OHare, A Sassu & J Stafford "<u>Facilitating Ubiquitious interaction using Intelligent Agents</u>", In: Marielba Zacharias ; Jos Valente de Oliveira (eds). **Human-Computer Interaction : The Agency Perspective.** Heidelberg: Springer Berlin Heidelberg, 2012

T. Holz, A.G Campbell, G.M.P. O'Hare, J.W Stafford, A. Martin, M. Dragone , "<u>MiRA-Mixed Reality Agents</u>", **International Journal of Human-Computer Studies** , ELSEVIER,2011

L. Görgü , A.G Campbell , K. McCusker , M. Dragone ,M.J. O'Grady , N.E O'Connor , G.M.P. O'Hare, "<u>FreeGaming: Mobile, Collaborative, Adaptive and Augmented ExerGaming</u>", In Proceedings of 8th International Conference on Advances in Mobile Computing & Multimedia (**MoMM2011**), November 8th – 10th , Paris,2010

B. Denby, A.G. Campbell, H. Carr & G.M.P. O'Hare, "<u>The LAIR: Lightweight Affordable Immersion Room</u>", **Presence: Teleoperators and Virtual Environments**, 18(5) , MIT press ,2009.

O'Hare, G.M.P., Campbell, A.G & Duffy B.R., "<u>NeXuS: Mixed Reality Experiments with Embodied Intentional Agents</u>", Proceedings of 17th Annual Conference on Computer Animation and Social Agents (**CASA2004**), 7th-9th July University of Geneva, Switzerland, Computer Graphics Society (CGS) Publishers, 2004.

Past IT Employment

Parnham.ie, *Dublin (December 2009 – September 2012)*
I acted as Chief Technology officer for promotions company that developed Apps for both Android and iPhone.

Education Officer/Vice-President UCD Students' Union *(June 2002- July 2003)*
My duties included sitting on over 21 UCD committees, which included drawing up the College Computer Examination guidelines and creating the college on-line system.

Complete Business Solutions (CRM software development*), Dublin (Summer 2001)*
Factory Direct (Computer sales company*), Toronto, Canada (Summer 2000)*

Non- IT Work and Volunteer Work Experience

Governing Authority Member, UCD, (2002-2003, 2005-2006) **Young Progressive Democrats Chairman**, (2007-2008)
ACT, (America Comes together), Orlando, Florida (November 2004)- Volunteer
Camara, (Training teachers in IT in Africa) , Ethiopia and Kenya (April 2006- 2008) Volunteer*
Education Officer/Vice-President UCD Students' Union *(June 2002- July 2003)* .
Odd-jobs (1998 - 2009) *Usher for Ormonde Cinema, Stillorgan,* Gate Manger / Roadie work for outdoor concerts for major concerts in Ireland included **Oxygen, Slane and Croke Park concerts. Worked one summer In McDonalds.**

References

Prof. Gregory O'Hare	Dr. Waseem Akhtar
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