HORIA ALEXANDRU MAIOR

`http://www.nottingham.ac.uk/~psxhama`

School of Computer Science, University of Nottingham, NG8 1BB, UK

horia.maior@nottingham.ac.uk

EDUCATION

University of Nottingham, UK *2012-2016*
PhD Candidate at the Mixed Reality Lab & Computer Science
Cross-Discipline Research with Horizon Digital Economy - Centre for Doctoral Training
Thesis:*"The physiological measure and feedback of workload using fNIRS"*

Swansea University, UK *June 2012*
B.Sc. in Computer Science
Dissertation: Modelling and Simulation of Railways *"Safe Trains - a CSP Approach"*
Award: First class honours degree

RESEARCH INTERESTS

Brain and Physiological data use for Human Computer Interaction

My research lies in the intersection between Human-Computer Interaction (HCI), Brain-Computer Interface (BCI), and Human Factors. We are currently looking into the integration of non-invasive brain monitoring devices, such as functional Near Infrared Spectroscopy (fNIRS), in the field of HCI. More specifically, I am looking at how we can use such devices to sense physiological responses to human cognition and mental workload, and how we can use this quantitative measure in real time for HCI lab based evaluation.

- Continuous involvement with the HCI community (often at ACM CHI - the top conference for Human-Computer Interaction).

- Involved in the Academic Review process for multiple conferences - Associate Chair at ACM-CHI 2016, UIST 2016, ACM-CHI 2015, ACM-CHIPLAY 2014, IEEE CASE 2014, IIiX2014.

- Memberships - Association for Computing Machinery (ACM), Chartered Institute of Ergonomics and Human Factors.

PUBLICATIONS

Peer reviewed Conference Papers, Journal Papers

· Lukanov K., **Maior, H. A.**, and Wilson, M. L. *Using fNIRS in Usability Testing: Understanding the Effect of Web Form Layout on Mental Workload.* In: CHI'16 ACM SIGCHI Conference on Human Factors in Computer Systems, San Jose, California, May 2016. IN PRESS (Acceptance rate 20%)

· **Maior, H. A.** Pike, M., Wilson, M. L., and Sharples, S. *Examining the Reliability of Using fNIRS in Realistic HCI Settings for Spatial and Verbal Tasks.* In: CHI'15 ACM SIGCHI Conference on Human Factors in Computer Systems, Seoul, Korea, April 2015. (Acceptance rate 20%)

· **Maior, H. A.** and Rao, S. (2014.) *A Self-Governing, Decentralized, Extensible Internet of Things To Share Electrical Power Efficiently.* In IEEE CASE 2014 International Conference on Automation Science and Engineering, 18th August 2014. Taipei Taiwan.

· Pike, M., **Maior, H. A.**, Porcheron, M., Sharples, S. and Wilson, M. L. (2014). *Measuring the effect of Think Aloud Protocols on Workload using fNIRS.* In: CHI'14 ACM SIGCHI Conference on Human Factors in Computer Systems, April-May 2014, Toronto. (Acceptance rate 20%)

- **Maior, H. A.**, Pike, M., Wilson, M. L., and Sharples, S. *Continuous detection of workload overload: An fNIRS approach.* In Contemporary Ergonomics and Human Factors 2014: Proceedings of the international conference on Ergonomics & Human Factors 2014, Southampton, UK, April 2014.

Workshop papers, Abstract Papers, Magazine Articles

- **Maior, H.A.**, and Stringer, P. (2015) *The Values of Games for Health and Well Being.* Interdisciplinary Reflections on Games and Human Values - Workshop , The ACM SIGCHI Annual Symposium on Computer-Human Interaction in Play (CHI PLAY), London, 2015.
- **Maior, H.A.**, Wilson, M.L. and Sharples, S. (2015) *fNIRS in Human Factors.* 2FNIRS Workshop, Toulouse, France April 2015.
- **Maior, H.A.**, Pike, M. *Measuring Work Overload.* The Ergonomist Magazine, May 2014.
- **Maior, H.A.**, Pike, M., Wilson, M.L. and Sharples, S. (2013) *Directly Evaluating the Cognitive Impact of Search User Interfaces: a Two-Pronged Approach with fNIRs.* EuroHCIR 2013 Workshop, Dublin, Ireland, August 2013

TEACHING AND ACADEMIC RELATED EXPERIENCE

Supervision 2015-2016
3rd Year Project Supervision *University of Nottingham*

- "Evaluating Mental Workload through Psycho-physiological Measurements using a Sensory Device".

Supervision 2014-2015
Masters Student - HCI Prize for the BEST MASTERS DISSERTATION *University of Nottingham*

- Publication: "Using fNIRS in Usability Testing: Understanding the Effect of Web Form Layout on Mental Workload".

Lecturing 2015
Lectures *University of Nottingham*

- G54MXR Mixed Reality, Lecture: Brain Computer Interfaces for Human Computer Interaction
- G51FSE Introduction to Software Engineering

Teaching Sep 2013 - present
Teaching Assistant *University of Nottingham*

- G51FSE Introduction to Software Engineering (Java, Object Oriented Programming) (2015-2016)
- G54PRG Programming, University of Nottingham (C/C++)
- G51CSA Computer Systems Architecture (ARM Assembly Language)
- G51FSE Introduction to Software Engineering (2014-2015)

Outreach experience March 2016
International Officer for the School of Computer Science *University of Nottingham*

- Create campaigns to meet and attract excellent potential undergraduate and postgraduate students to join our Computer Science programmes at Nottingham University.
- Attending universities fairs abroad (`http://en.riuf.ro/`), to present to schools and potential students.

AWARDS, HONOURS AND GRANTS

"Helf Elf" September 2015
Postgraduate Ingenuity Prize for BEST New Business Idea

- £5000 prize from CityCare Nottingham.
- £1000 Grant from Santander.
- Co-Founded Healthy Research CIC.

Unilever Grant

· Research Grant for one PhD studentship on "Using fNIRS in Human-Computer Interaction Research".
· With Dr Max L. Wilson, University of Nottingham.

Research Travel Grants

· £1000 Travel Grant from the School of Computer Science, University of Nottingham. (2016)
· £1000 Travel Grant from the School of Computer Science, University of Nottingham. (2015)
· £800 University of Nottingham - Postgraduate Travel Grant Competition. (2014)

2013 - 2015

Summer Schools

· Digital Economy Web Science and Big Data Analytics, July 2015.
· Digital Economy Summer School: Digital Revolutions, Oxford, July 2013.

2012 - present

Programming Coach, Contestant, Organizer

· ACM-ICPC Coach at NWERC 2015 - Linkping, Sweden - http://www.nwerc.eu/
· ACM-ICPC Site Director at UKIEPC2015 - Nottingham, UK - http://ukiepc.info/
· ACM-ICPC Coach at NWERC 2013 - Delft, Netherlands - http://2013.nwerc.eu/
· Contestant at the 2012 ACM ICPC - NWERC in Bremen, Germany - http://2012.nwerc.eu/

TECHNICAL STRENGTHS

Computer Languages	Java, JavaScript, AngularJS, PHP, C#, C/C++, MySQL etc
Programming environments	Visual Studio, NetBeans, Eclipse, Webstorm, PHPStorm
Professional Software	Latex Document Writing, Statistics SPSS, Adobe Illustrator
Hardware	EEG, fNIRS Brain Scanner, Arduino, Raspberry Pi

INTERNSHIPS AND WORK EXPERIENCE AND VOLUNTEERING

RatedDoctor.com   Feb 2015 - present
Chief Technology Officer   *Nottingham*

· `www.rateddoctor.com` (MVP Release Date 1st of June 2016)
· Online platform to bring patients and specialists doctors together.
· Responsibilities varied from determining a scope for the project and developing requirements - working closely with the CEOs - to project management - working closely with the designers and development team.

ACMCHI Conference on Computer-Human Interaction   May 2016
Student Volunteer at chi4good   *San Jose, California*

· Getting involved in preparing and helping out with running out the biggest conference in Computer-Human Interaction.
· Duties included coordinating the plenary and other conference talks, preparing materials for Workshops and help out organizers to set up, conference registration, meeting lots of people and having fun!

IIIT-Bangalore and Horizon Digital Economy Research Hub   Jan 2014 - May 2014
Research Intern   *Electronic City, Bangalore, India*

· Digital Economy Research based in Bangalore, India.
· Project: The INTERNET of THINGS and the Smart Grid.

· Publication: **Maior, H. A**. and Rao, S. *"A Self-Governing, Decentralized, Extensible Internet of Things To Share Electrical Power Efficiently. In IEEE CASE 2014"*

Invensys Rail and Swansea University   June 2011 - Sep 2011
Research Intern   *Swansea, UK*

· Modelling Railways Safety using formal language CSP (communicating sequential processes)
· Time simulating capacity of Railways using formal language Timed CSP.

AMPsuite LTD   Sep 2014 - June 2015
Web developer   *Nottingham*

· Building web-based software tools for Records Label companies across the globe.
· Client-focused, understand client needs.
· Front end, back end - PHP, JavaScript, MySQL, html5.

Amazon.co.uk   June 2010 - June 2012
Warehouse Problem Solver   *Swansea*

· Find and correct mistakes in the system.
· Roam the warehouse with a laptop on wheels and offer feedback on how to do things better.