# Andrei Bosco Bezerra Torres

OntarioTech University
PhD Student

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## Areas of Specialization

Virtual Reality • 3D Modelling & Animation • Web and Mobile Design and Development • Internet of Things • Wireless Sensor Network • Data Fusion • Precision Agriculture

## Professional Experience

**2018-present** **Ontario Tech University**, Ontario, Canada
*Teaching Assistant*

**2015-present** **Federal University of Ceará** (UFC), Ceará, Brazil
*Assistant Professor at Digital Systems and Media (SMD)*
*\*On official leave of absence during Ph.D.\**

**2020** **Palomino Sys**, Ontario, Canada
*Research and Development - Collaborative Learning of Usability Experiences (CLUE) internship*

**2019** **Public Services Health and Safety Association**, Ontario, Canada
*Research and Development - Collaborative Learning of Usability Experiences (CLUE) internship*

**2011-2015** **Federal University of Ceará** (UFC), Ceará, Brazil
*Accessibility and New Web Technologies Researcher*

**2012** **Studio PO**, Ceará, Brazil
*CG Artist*

**2005-2011** **Federal University of Ceará** (UFC), Ceará, Brazil
*Webdesigner*

**2008** **André Grieser Architecture and Acoustic Consulting**, Ceará, Brazil
*Architecture Internship*

**2007** **César Fiuza Projetos**, Ceará, Brazil
*Architecture Internship*

## Academic Experience

Teaching Assistant

**2018-2020** **Ontario Tech University, Canada**
Modelling & Animation System II

Computer Architecture
Game Design Workshop II
Cinematic Systems Design
Game Design Workshop III
Industrial Design for Game Hardware

PROFESSOR

2015-2018 **Federal University of Ceará, Brazil**
Visual Communication I
Visual Communication II
History of Design
Three-dimensional Modelling Tools I
Digital Animation Techniques I
Motion Graphics
Programming for Mobile Devices (Swift for iOS)

## Scholarly and Professional Academic Activities

2020-present **DiSIMinate 2 Build - maxSIMhealth**
Steering Comittee - Information Technology Chair.
https://d2b.maxsimhealth.com/

2019-present **Cureus - Annals of Simulation - maxSIMhealth**
Deputy Editor.
https://www.cureus.com/channels/simulation-archives

## Education

2018-2022 **PH.D. in Computer Science, UOIT**
Research Topics: *Virtual and Augmented Reality, Serious Games, Gamification*

2015-2017 **M.Sc. in Teleinformatics Engineering, UFC**
Dissertation: *Multilevel Data Fusion for Internet of Things in Precision Agriculture*

2003-2011 **B.ARCH. in Architecture and Urbanism, UFC**
Dissertation: *Modular Architecture*

## Grants, Honors & Awards

2020-2021 Dubrowski A, Kapralos B, Mutombo P, **Torres A.** *Using an innovative tool to teach and test cultural competencies to enhance age-friendly communities.* Teaching City Grant, City of Oshawa. $20,000. August 2020 - July 2021.

2018-2022 **Torres A. B. B.** *Ontario Trillium Scholarship (OTS)* $40,066 yearly

## Technical Skills

Web Development (Vue.js, Django, HTML5, CSS3)
3D Software (Blender, Modo, Maya, 3DStudio)
Scientific computing (Python, Matlab)
Scripting languages (Python, Shell Script, JavaScript)
3D Engines (Unity, Unreal)
Video Editing/Compositing (After Effects, Nuke, Fusion)
Revision control (Git, Subversion)
Digital Typesetting (LaTeX)

## Languages

*Portuguese* (native)
*English* (professional proficiency - CLB 9+)

## Volunteer Work

2015 **App Run - First Android App Marathon**
Project coordinator and programming lecturer

2015 **Introduction to Unity 3D Workshop**
Workshop lecturer and organizer

2000-2003 **Mandrake Linux (Mandriva)**
Brazilian Portuguese translator

## Publications & Talks

### Journal articles

2020 **TORRES, Andrei B. B.**; ROCHA, Atslands R.; SILVA, Ticiana L. C.; DE SOUZA, José Neuman and GONDIM, Rubens S. (2020). Multilevel Data Fusion for the Internet of Things in Smart Agriculture, *Computers and Electronics in Agriculture*, vol. 171, p. 105309. [DOI]

2018 FERREIRA, Cristiane M. S.; PEIXOTO, Maria J. P.; DUARTE, Paulo A. S.; **TORRES, Andrei B. B.**; SILVA JUNIOR, Messias L.; ROCHA, Lincoln S. and VIANA, Windson. (2018). An Evaluation of Cross-Platform Frameworks for Multimedia Mobile Applications Development, *IEEE Latin America Transactions*, vol. 16, no. 4, pp. 1206-1212. [DOI]

2016 CARVALHO, Jose C. S.; ROCHA, Atslands R.; SOUSA, Flavio R. C.; **TORRES, Andrei B. B.** and DE SOUZA, José Neuman. (2016). Management of Multiple Applications for Shared Sensor and Actuators Networks, *IEEE Latin America Transactions*, vol. 14, no. 10, pp. 4358-4366. [DOI]

### Book Chapters

in press **TORRES, Andrei** and maxSIMhealth Group. An interconnected collective of manufacturing, design, and simulation labs to advance medical simulation training. In A. L. Brooks, S. Branham, B. Kapralos, A. Nakajima, J. Tyerman, and l. Jain (Eds.). *Recent Advances in Technologies for Inclusive Well-Being: Virtual Patients, Gamification and Simulation.* Springer-Verlag, Intelligent Systems

Reference Library, Germany (to appear).

2017     BONATES, Mara F. and **TORRES, Andrei B. B.** (2017). Modelagem 3D: Conceitos Básicos e o Estado da Arte. In: Edgar Marçal et al. (Org.). *Sistemas e Mídias Digitais: Uma Introdução* (pp. 61-87), 1 ed. Campinas, São Paulo: Pontes Editores.

2016     ROCHA, Atslands R.; SOUZA, Flavio R. C.; **TORRES, Andrei B. B.** and DE SOUZA, José Neuman. (2016). Internet of Things: Architecture, Technologies and Applications. In: Silvia Watts. (Org.). *The Internet of Things (IoT): Applications, Technology, and Privacy Issues* (pp 1-21), 1 ed. Hauppauge, New York: Nova Publishers.

CONFERENCE PAPERS

2020     **TORRES A.** et al. (2020). A 360 Video Editor Framework for Interactive Training. *2020 IEEE 8th International Conference on Serious Games and Applications for Health (SeGAH)*, Vancouver, BC, Canada, 2020, pp. 1-7, doi: 10.1109/SeGAH49190.2020.9201707.

2019     CRUZ, S. V.; QUINTINO, G. de Castro; **TORRES, A. B. B.** and VIANA, Windson. (2019). Providing Sense of Embodiment with Mobile Virtual Reality Devices: A Case Study using the "Lamp-Head's Laboratory" Animation. *21st Symposium on Virtual and Augmented Reality (SVR 2019)*, pp. 1-9, Rio de Janeiro, Brazil, doi: 10.1109/SVR.2019.00017.

**TORRES, A. B. B.**; KAPRALOS, B.; Uribe-Quevedo, A.; ZEA, Enilda and DUBROWSKI, Adam. (2019). A Gamified Educational Network for Collaborative Learning. In: *Proceedings of the Annual International Conference on Interactive Mobile Communication, Technologies and Learning (IMCL 2019)*, October 31 - November 1, Thessaloniki, Greece, doi: 10.1007/978-3-030-49932-7_26.

WILCOCKS, K.; **TORRES, A. B. B.**; Uribe-Quevedo, A.; KAPRALOS, B.; HUNT, S.; SLADE, K. and CULLEN; G. (2019). Development of a Virtual Reality-Based Working at Heights Safety Awareness Framework. In: *Proceedings of the 23rd Annual IEEE International Symposium on Consumer Technologies (ISCT 2019)*, June 19-21, Ancona, Italy, doi: 10.1109/ISCE.2019.8901011.

2017     **TORRES, Andrei B. B.**; FILHO, José A.; ROCHA, Atslands R.; GONDIM, Rubens S. and DE SOUZA, José Neuman. (2017). Outlier detection methods and sensor data fusion for precision agriculture. In: *9º Simpósio Brasileiro de Computação Ubíqua e Pervasiva*, São Paulo, Brazil.

2016     **TORRES, Andrei B. B.**; ROCHA, Atslands R. and DE SOUZA, José Neuman. (2016). Análise de Desempenho de Brokers MQTT em Sistema de Baixo Custo. In: *15º Workshop em Desempenho de Sistemas Computacionais e de Comunicação*, Porto Alegre. Anais do XXXVI congresso da sociedade brasileira de computação. Porto Alegre: Sociedade Brasileira de Computação, Brazil.

FILHO, Paulo T. C. P.; SARMENTO, Wellington W. F.; **TORRES, Andrei B. B.**; SOARES, Jose M.; BARROSO, Giovanni C. and PAILLARD, Gabriel A. L. (2016). u-LabPA: A framework based on ubiquitous computing for laboratory activities. In: *8th Euro American Conference on Telematics and Information Systems (EATIS)*, Cartagena, Colombia.

2014     PEIXOTO, Maria J. P.; **TORRES, Andrei B. B.**; SARMENTO, Wellington W. F.; FREIRE, R. S. and PEQUENO, Henrique S. L. (2014). Mathpost: A Integração de Uma Ferramenta Gráfica Utilizando LaTeX para Discussões em Webforum. In: *Congresso Brasileiro de Educação em Engenharia (COBENGE)*, Juiz de Fora, Brazil.

COUTINHO JÚNIOR, A. L.; **TORRES, Andrei B. B.**; PEIXOTO, Maria J. P.; BEZERRA, C. M. A.; ALBUQUERQUE, Y. V. S.; GURGEL, D. A. A.; PEQUENO, L. L. C. and SARMENTO, W. W. F. (2014). Utilização de robótica livre com dispositivos móveis no ensino de lógica de programação para alunos do Ensino Fundamental. In: *XIX Conferência Internacional sobre Informática na Educação (TISE)*, Fortaleza, Brazil.

2013    SARMENTO, W. W. F.; PAILLARD, Gabriel A. L.; LIMA, W. S.; RABELO, K. F.; **TORRES, Andrei B. B.**; GOMES, Humberto O. O.; COSTA, P. M. B. and PEQUENO, M. C. (2013). extMobilisTTS: Uma Arquitetura de Aplicação Móvel para Suporte a Fóruns usando Text-to-Speech em Ambientes Virtuais de Aprendizagem. In: *31º Simpósio Brasileiro de Redes de Computadores e Sistemas Distribuídos*, Brasília. Anais do 31º Simpósio Brasileiro de Redes de Computadores e Sistemas Distribuídos. SBC, p. 1068-1075, Porto Alegre, Brazil.

2011    RABELO, K. F.; HARRIMAN, C. L.; SARMENTO, W. W. F. and **TORRES, Andrei B. B.** (2011). Avaliação de Usabilidade no processo de desenvolvimento contínuo em Ambientes Virtuais de Aprendizagem: um estudo de caso com o ambiente SOLAR. In: *22o. Simpósio Brasileiro de Informática na Educação e o 17o. Workshop de Informática na Escola (SBIE - WIE)*. Anais do Simpósio Brasileiro de Informática na Educação, p. 781-791, Aracaju, Brazil.

ABSTRACTS

2020    WAHAB S., SMEETON D., **TORRES A.**, KAPRALOS B., DUBROWSKI A. (2020). Application of hierarchical task analysis to construct experiential task analysis hands-on and on-line training modules to teach microtomy: A pilot study. To be presented at: *2020 Canadian Health Workforce Virtual Conference*, December 9th-10th.

GUÉRARD-POIRIER, N., BENIEY, M., MÉLOCHE-DUMAS, L., **TORRES, A.**, DHANE, M., MISHEVA, B., DUBROWSKI, A., MERCIER, F., PATOCSKAI, E. (2020). A Gamified Network for Surgical Education during COVID-19: A Randomized Controlled Trial. To be presented at: *Canadian Conference for the Advancement of Surgical Education (C-CASE) 2020*, October 29th-30th.

2019    **TORRES** A., KAPRALOS, B., URIBE-QUEVEDO A., ZEA E., DUBROWSKI A. (2019) A gamified educational network for collaborative learning. In: *Proceedings of the 2019 SIM-one SIM Expo*, Montreal, Canada, October 21st-22nd.

# Research Projects

2020-present **Person-Centered Serious Games for Mental Health Education.**
Interdisciplinary project in partnership with members of the Health Science department from York University, funded by an NSERC grant. Acting as researcher and developer creating the 3D assets and dialogue editor and player.

2018-present **GEN: Gamified Educational Network**
Researcher and developer of GEN, focusing on web development and the application of gamification concepts.

2016-2019 **SmartGreen: An Internet-of-Things Framework for Intelligent Agriculture**
Researcher and developer (software and hardware), worked in implementing data fusion algorithms in a sensor network based on low-end hardware.

2010-2011   **Virtual Shooting Training System**
            Director of 3D environments and models.

2007-2009   **Use of Mediatic Languages in Distance Learning Courses**
            Researcher of new technologies to improve distance learning.