

Carlos Arturo Osorio Sandoval

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Education

2016–2020	PhD in Civil Engineering My research focussed in developing a framework to integrate building information modelling and construction simulation within a game engine Thesis title: "BIM-based construction simulation modelling" Viva examination: <i>December 2020</i> Graduation date: <i>July 2021</i>	<i>University of Nottingham</i>
2013–2015	MEng in Construction Engineering & Management G.P.A. 93 Thesis title: "Impact of of labour absenteeism on construction activities runtime in housing projects"	<i>Autonomous University of Yucatan</i>
2006–2012	Civil Engineering G.P.A. 82	<i>Autonomous University of Yucatan</i>

Teaching experience

2018–2020	Graduate School Teaching Affiliate <i>Description:</i> Delivering training for one of the Graduate School's Research Training Programmes <i>Modules:</i> <ul style="list-style-type: none">• Further presentation skills for researchers	<i>Graduate School - University of Nottingham</i>
2016–2020	Demonstrator <i>Description:</i> Assisting in teaching in workshops, tutorials and lab sessions of several modules for undergraduate and postgraduate students. <i>Modules & responsibilities:</i> <ul style="list-style-type: none">• Testing of fundamental material properties. Demonstrating lab procedures of the compressive and flexural tensile strength tests of plain and reinforced concrete elements. Assessing lab reports and providing feedback to students.• Introduction to building information modelling. Providing assistance to students during workshop and tutorial sessions related to the use of the software Revit. Assessing coursework and providing feedback to students.• Further building information modelling. Providing assistance to students during workshop and tutorial sessions related to the use of the software Robot and Navisworks. Assessing coursework and providing feedback to students.• Project planning. Assisting the module convenor to assess group presentations and provide assistance to students during workshop sessions.• Group design project. Providing assistance to students during workshop sessions related to the use of several BIM software packages.• Construction project management 1. Providing assistance to students during tutorial sessions related to construction project programming and cost estimating.	<i>Department of Civil Engineering - University of Nottingham</i>

Professional associations

2013	Mexican Professional Engineering License Number: 8041013
2020	Graduate Member of the Institution of Civil Engineers (GMICE) Membership reference: 93546289 Working towards full membership as Chartered Engineer
2020	Fellow of the Higher Education Academy (FHEA) Fellowship reference: PR188502

Other qualifications

February 2019	Preparing to Teach in Higher Education Certificate Awarded by the University of Nottingham.
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Work experience

2020–present	Research associate - BIM Risk Library <i>Key responsibilities:</i> Develop, design and deliver tools and techniques for industry in the area of BIM and construction health and safety improvement.	<i>University of Manchester</i>
2018–2019	Graduate centre coordinator <i>Key responsibilities:</i> To provide support to the Researcher Training and Development Managers and postgraduate students at one of the Graduate School's Graduate Centres by promoting the Centre, ensuring a regular daily presence at them, dealing with general student queries, supporting local events, activities and Faculty training programmes and ensuring that the facilities are maintained to a high standard.	<i>University of Nottingham</i>
2012–2016	Cost engineer <i>Key responsibilities:</i> Preparing construction programmes and cost estimates, planning and controlling project costs, preparing customer billing processes, resolving issues to ensure the delivery of projects.	<i>Qyder Construcciones, S.A. de C.V</i>
2011–2012	Supervision manager <i>Key responsibilities:</i> Coordinating supervisors for various construction projects within the city, monitoring project progress.	<i>Imadico, S.A. de C.V.</i>
2010–2011	Construction site manager <i>Key responsibilities:</i> Supervising contracted staff, meeting and coordinating subcontractors, preparing site reports, problem solving in various construction projects in the Yucatan State.	<i>APM Constructores</i>
2009–2010	Assistant construction site manager <i>Key responsibilities:</i> Assisting with project management activities in highway overpass projects in the Yucatan State.	<i>Delsa Constructor, S.A. de C.V.</i>

Publications

- 2020 **Osorio-Sandoval, C. A.** et al. “Discrete-event simulation and building information modelling based animation of construction activities”. In: *Proceedings of the 18th International Conference on Computing in Civil and Building Engineering. ICCCB E 2020*. 2020, pp. 285–294
- 2020 Fadoul, A., W. Tizani, and **C. A. Osorio-Sandoval**. “A knowledge-based model for constructability assessment of buildings using BIM”. in: *Proceedings of the 18th International Conference on Computing in Civil and Building Engineering. ICCCB E 2020*. 2020, pp. 147–159
- 2018 **Osorio-Sandoval, C. A.**, W. Tizani, and C. Koch. “A method for discrete event simulation and building information modelling integration using a game engine”. In: *Advances in Computational Design 3.4* (2018), pp. 405–418
- 2018 **Osorio-Sandoval, C. A.**, W. Tizani, C. Koch, and A. Fadoul. “Integration of building information modelling and discrete event simulation within a game engine”. In: *17th International Conference on Computing in Civil and Building Engineering*. 2018
- 2018 Fadoul, A., W. Tizani, C. Koch, and **C. A. Osorio-Sandoval**. “A constructability assessment framework for buildings design using building information modelling (BIM)”. in: *17th International Conference on Computing in Civil and Building Engineering*. 2018
- 2017 **Osorio-Sandoval, C. A.**, C. Koch, and W. Tizani. “Computer technology for serious games in education: A literature review”. In: *Proceedings of the 24th EG-ICE International Workshop on Intelligent Computing in Engineering 2017*. EG-ICE. 2017, pp. 239–249
- 2016 **Osorio-Sandoval, C. A.**, J. N. Zaragoza-Grifé, G. A. CoronaSuárez, and J. A. González-Fajardo. “Discrete Event Simulation Analysis of the Effect of Labor Absenteeism on the Duration of Construction Activities in Housing Projects”. In: *International Journal of Engineering Research and Applications* 6.11 (2016), pp. 46–55
- 2014 **Osorio-Sandoval, C. A.** and J. N. Zaragoza-Grifé. “Determinación del impacto del ausentismo de la mano de obra sobre el tiempo de ejecución de las actividades de construcción de vivienda”. In: *Administración y Tecnología para Arquitectura, Diseño e Ingeniería 2014*. Vol. 4. 2014, pp. 153–159

Conferences and seminars

August 2020	ICCCBE/CIB W78 Virtual Joint Conference <i>Online</i> Paper title: "Discrete-event simulation and building information modelling based animation of construction activities".
April 2020	CSEI Seminar series <i>Nottingham, United Kingdom</i> Presentation title: "A framework to integrate building information modelling and discrete event simulation".
May 2019	Engineering Research Showcase 2019 <i>Nottingham, United Kingdom</i> Presentation title: "Practice makes perfect: Virtual construction projects".
February 2019	CSEI Seminar series <i>Nottingham, United Kingdom</i> Presentation title: "Building information modelling and discrete event simulation based serious gaming for construction management education".
June 2018	17 th International Conference on Computing in Civil and Building Engineering <i>Tampere, Finland</i> Paper title: "Integration of building information modelling and discrete event simulation within a game engine". (Presented by co-author)
May 2018	Engineering Research Showcase 2018 <i>Nottingham, United Kingdom</i> Poster title: "BIM-based serious gaming for construction management education".
January 2018	CSEI Seminar series <i>Nottingham, United Kingdom</i> Presentation title: "Building information modelling based serious gaming for construction management education".
July 2017	24 th EG-ICE International Workshop on Intelligent Computing in Engineering <i>Nottingham, United Kingdom</i> Paper title: "Computer technology for serious games in education: A literature review".
October 2014	8vo. Congreso Internacional en Administración y Tecnología para Arquitectura, Diseño e Ingeniería <i>Mexico city, Mexico</i> Paper title: "Determinación del impacto del ausentismo de la mano de obra sobre el tiempo de ejecución de las actividades de construcción de vivienda".

Funding

2020	Graduate School Travel Prize Awarded by the University of Nottingham to attend the ICCCB/E/W78 joint conference. (Changed to virtual format amid COVID-19)
2019	Postgraduate Research Experience Fund Awarded by the University of Nottingham to organise the conference "Academic public engagement on YouTube".
2018–2019	Beca Complemento de Apoyo al Posgrado <i>Scholarship for PhD studies</i> Awarded by the Mexican Ministry of Public Education.
2016–2020	Conacyt al extranjero 2016 <i>Scholarship for PhD studies</i> Awarded by the Council of Science and Technology, Mexico to carry out PhD studies in The University of Nottingham.
2011	PIMES Spring 2011 <i>Scholarship for international mobility</i> Awarded by the Autonomous University of Yucatan to study a semester in the National University of Cordoba, Argentina

Languages

Spanish	Native speaker
English	C1 (IELTS 7.5 2015)
French	A1
Russian	Limited

Software and programming languages

BIM	Revit, Robot, 3D Repo, Navisworks, IDEA Architecture, Ecotect Analysis
Design	Autocad, G-StarCad
Cost engineering	Neodata PU2012, Opus, Sinco-Wifi
Project mgmt.	Microsoft Project, ProjectLibre
Statistics	MiniTab, EasyFit, SPSS
Simulation	Simphony.net
Game engine	Unity
Programming	C#, Visual basic, Delphi

Other activities

2019-2020	Member of the organising committee of the XVIII Symposium of Mexican Studies and Students in the UK
2019	Participated in the Ingenuity19 programme, a forum for entrepreneurs and community innovators to come together to explore key challenges facing society
2017–2020	Postgraduate Research Engineering Community (PREC) representative for the Centre for Structural Engineering and Informatics
2017–2018	Treasurer of the Mexican Society of the University of Nottingham