

Lesandro Ponciano

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ORCID: <https://orcid.org/0000-0002-5724-0094>

Also known as: Lesandro Ponciano dos Santos

Expertise: Collaborative Systems • HCI • Data Science • e-Science • Citizen Science • Human Computation

Experience: Quantitative Research • System Simulation • Data Modeling • GQM Method • Data Mining

Languages: Portuguese (native) • English (advanced) • Spanish (basic)

Education

PhD. in Computer Science (2012 - 2015) • Federal University of Campina Grande, Brazil

- Thesis: Human Computation from the Perspective of the Engagement and Credibility of Humans and the Replication of Tasks
- Advisor: Francisco Brasileiro, PhD. Newcastle University (UK), fubica@dsc.ufcg.edu.br
- Grade Point Average: 10.0/10.0

M.Sc. in Computer Science (2009 - 2011) • Federal University of Campina Grande, Brazil

- Thesis: Assessing Energy Saving Strategies in Peer-to-Peer Opportunistic Grids
- Advisor: Francisco Brasileiro, PhD. Newcastle University (UK), fubica@dsc.ufcg.edu.br
- Grade Point Average: 9.0/10.0 - Distinction: **Summa cum laude**

B.Sc. in Information Systems (2005 - 2008) • Pontifical Catholic University of Minas Gerais, Brazil

- Grade Point Average: 8.9/10.0 - Distinction: **Summa cum laude**

Research Experience

Pos-doc Researcher (01/2022 - 12/2022) • Dresden University of Technology, Germany

- Institute of Systems Architecture - Chair of Systems Engineering
- Project: AI-Sprint - Artificial intelligence in Secure Privacy-preserving computing coNTinuum
- European Union Horizon 2020 research and innovation programme under Grant Agreement No. 101016577

Researcher (02/2016 - 12/2016) • Laboratory of Distributed Systems, Brazil

- Project: PrivIoT - Privacy on the Internet of Things
- Sponsored by Hewlett-Packard (HP)

Doctoral Researcher (02/2016 - 12/2016) • Federal University of Campina Grande, Brazil

- Human computation, citizen science and distributed systems
- Scholarship of Brazilian National Council for Scientific and Technological Development (CNPq)

Undergraduate Researcher (02/2007 - 01/2008) • Pontifical Catholic University of Minas Gerais, Brazil

- Parallel scheduling, cluster computing
- Institutional Scientific Initiation Scholarship Program (PIBIC) of Brazilian National Council for Scientific and Technological Development (CNPq)

Undergraduate Researcher (02/2006 - 01/2007) • Pontifical Catholic University of Minas Gerais, Brazil

- Technology adoption
- Scientific Initiation Scholarship Program (PROBIC)

Teaching Experience

Associate Professor (02/2016 - current) • Pontifical Catholic University of Minas Gerais, Brazil

- Institute of Exact Sciences and Informatics- Department of Software Engineering and Information Systems
- Programs: Computer Science, Software Engineering, Information Systems, Electrical Engineering

Analytics Tutor (01/2012 - 05/2013) • Federal University of Campina Grande, Brazil

- Sponsored by Hewlett-Packard (HP) Brazil
- Technical skills: R, Python, Data Visualization, Statistics

Scientific Awards

- 2022** **Special Recognitions for Outstanding Reviews**, the ACM Group 2022/23 Conference. Association for Computing Machinery
- 2021** **Best reviewers. Brazilian Symposium on Computer Education (EduComp)**. Brazilian Computer Society.
- 2020** **Honourable Mention in Exact Sciences as advisor of undergraduate research** (student Gabriel Moreira Chaves). The 28th Scientific Initiation Seminar, Pontifical Catholic University of Minas Gerais.
- 2019** **Special Recognitions for Outstanding Reviews**, the ACM CHI 2020 Conference. Association for Computing Machinery
- 2018** **Honourable Mention in Exact Sciences as advisor of undergraduate research** (student Arthur V. Soares Pereira). The 26th Scientific Initiation Seminar, Pontifical Catholic University of Minas Gerais.
- 2017** **Third best paper of the Brazilian Symposium on Collaborative Systems (SBSC)**, paper: "Analysis of the Popularity, Visibility and Activity of Different Types of Robots on the Social Network Twitter." Brazilian Computer Society.
- 2014** **Student Scholarship at the 10th IEEE International eScience Conference**, The IEEE eScience International Conference. IEEE Computer Society.
- 2011** **Best Computer Science Master Thesis in Brazil- Finalist** (one of 10). Brazilian Computer Society.
- 2010** **Honourable Mention for the paper "Analysis of Green Computing Strategies in Opportunistic Computational Grids"**. The XXVIII Brazilian Symposium on Computer Networks and Distributed Systems.
- 2008** **Honourable Mention for the work "Analysis of Classification and Clustering Algorithms in the Discovery and Prediction of the Behavior of Parallel Tasks"**. The 16th Scientific Initiation Seminar, Pontifical Catholic University of Minas Gerais.
- 2007** **Honourable Mention for the article "Technique for Characterization of Workload of Parallel Machines to Extract Information Used by a Reconfigurable Task Scheduler"**. Scientific Initiation Papers Competition, the VIII Symposium on Computer Systems (WSCAD-CSS). Brazilian Computer Society.
- 2007** **Honourable Mention for the work "Proposal, Implementation and Evaluation of a Workload Characterization Technique for Parallel Machines for the Extraction of Information Used by a Scheduler"**. The 15th Scientific Initiation Seminar, Pontifical Catholic University of Minas Gerais.
- 2006** **Honourable Mention for the work "Advancement and Exclusion: Two Faces of the Digital Age, A Sociotechnical Analysis of TIs"**. The 14th Scientific Initiation Seminar, Pontifical Catholic University of Minas Gerais.

Academic Awards

- 2021** **Honoured Professor award**, granted by students at their commencement ceremony. Information System Program. The Pontifical Catholic University of Minas - Contagem.
- 2020** **Honoured Professor award**, granted by students at their commencement ceremony. Information System Program. Pontifical Catholic University of Minas - Barreiro.
- 2019** **Honoured Professor award**, granted by students at their commencement ceremony. Information System Program. Pontifical Catholic University of Minas - Barreiro.
- 2019** **Outstanding Teaching Performance**, granted by Pontifical Catholic University of Minas Gerais
- 2018** **Honoured Professor award**, granted by students at their commencement ceremony. Information System Program. The Pontifical Catholic University of Minas - Contagem.
- 2018** **Outstanding Teaching Performance**, granted by Pontifical Catholic University of Minas Gerais
- 2011** **Summa cum laude: Master's dissertation approved with distinction**, Graduate Program in Computer Science, Center for Electrical Engineering and Informatics. Federal University of Campina Grande.
- 2008** **Summa cum laude: Second-best academic performance throughout the Bachelor's Degree in Information Systems**, Pontifical Catholic University of Minas Gerais (PUC Minas)

Peer-reviewed Conference and Journal Publications [Published in English]

- [1] Ponciano, L. **How citizens engage with the social media presence of climate authorities: the case of five Brazilian cities**. *npj Clim. Action* 2, 44 (2023). DOI: [10.1038/s44168-023-00080-3](https://doi.org/10.1038/s44168-023-00080-3) Full-paper
- [2] Ramos, H.; Fonseca, M.; Ponciano, Lesandro. **Modeling and Evaluating Personas with Software Explainability Requirements**. In *VII Iberoamerican Workshop on Human-Computer Interaction*. 2021. DOI: [10.1007/978-3-030-92325-9_11](https://doi.org/10.1007/978-3-030-92325-9_11) Full-paper
- [3] Nelson, M. A; Ponciano, Lesandro, **"Experiences and insights from using Github Classroom to support Project-Based Courses"**. In *2021 Third International Workshop on Software Engineering Education for the Next Generation (SEENG)* at ICSE-JSEET. 2021. pp. 31-35. IEEE. DOI: [10.1109/SEENG53126.2021.00013](https://doi.org/10.1109/SEENG53126.2021.00013) Full-paper

- [4] PILAND, N.; VARESE, M.; SOACHA, K.; Ponciano, Lesandro; CASTANEDA, A.; ALVAREZ, H. G.; CUEVA, R.; DONOFRIO, G.; ESPITIA, J. E.; JURADO, C.; KOVACH, A.; LUIS, C.; MALDONADO, W.; CALLEJAS, S. M.; PIERA, J.; PLOS, A.; RESTREPO, J. F.; SANCHEZ, M.; SANDOVAL, M. J.; TORRES, D.; TORRICO, O.; WALLACE, R. B. **Citizen science from the Iberoamerican perspective: an overview, and insights by the RICAP network.** In: European Citizen Science Association Conference (ECSA Conference 2020), 2020, Trieste. DOI: [10.5281/zenodo.4019060](https://doi.org/10.5281/zenodo.4019060) Poster
- [5] de Macêdo Morais, L. A.; Andrade, N.; de Sousa, D. M. C.; Ponciano, Lesandro. **Defamiliarization, representation granularity, and user experience: A qualitative study with two situated visualizations.** In *2019 IEEE Pacific Visualization Symposium (PacificVis)*. 2019, pp. 92-101. IEEE. DOI: [10.1109/PacificVis.2019.00019](https://doi.org/10.1109/PacificVis.2019.00019) Full-paper
- [6] Ponciano, Lesandro; Pereira, Thiago Emmanuel. **"Characterising volunteers' task execution patterns across projects on multi-project citizen science platforms."** *Proceedings of the 18th Brazilian Symposium on Human Factors in Computing Systems*. 2019. pp. 1-11. ACM. DOI: [10.1145/3357155.3358441](https://doi.org/10.1145/3357155.3358441) Full-paper
- [7] Ponciano, Lesandro. **HCI Support Card: Creating and Using a Support Card for Education in Human-Computer Interaction.** In: Workshop on HCI Education, *Extended Proceedings of the 18th Brazilian Symposium on Human Factors in Computing Systems*. Porto Alegre, Brasil: SBC, 2019. pp. 106-111. DOI: [10.5753/ihc.2019.8409](https://doi.org/10.5753/ihc.2019.8409) Full-paper
- [8] Ponciano, Lesandro; Brasileiro, Francisco. **"Agreement-based credibility assessment and task replication in human computation systems."** *Future Generation Computer Systems*, 87 (2018): 159-170. DOI: [10.1016/j.future.2018.05.028](https://doi.org/10.1016/j.future.2018.05.028) Full-paper
- [9] Ponciano, Lesandro; Barbosa, Pedro; Brasileiro, Francisco; Brito, Andrey; Andrade, Nazareno. **"Designing for Pragmatists and Fundamentalists: Privacy Concerns and Attitudes on the Internet of Things."** *Proceedings of the XVI Brazilian Symposium on Human Factors in Computing Systems*. 2017. pp. 1-10. ACM. DOI: [10.1145/3160504.3160545](https://doi.org/10.1145/3160504.3160545) Full-paper
- [10] Eitzel, M.V., Cappadonna, J.L., Santos-Lang, C., Duerr, R.E., Virapongse, A., West, S.E., Kyba, C.C.M., Bowser, A., Cooper, C.B., Sforzi, A., Metcalfe, A.N., Harris, E.S., Thiel, M., Haklay, M., Ponciano, Lesandro, Roche, J., Ceccaroni, L., Shilling, F.M., Dörler, D., Heigl, F., Kiessling, T., Davis, B.Y. and Jiang, Q., 2017. **"Citizen Science Terminology Matters: Exploring Key Terms"**. *Citizen Science: Theory and Practice*, 2(1), p.1. DOI: [10.5334/cstp.96](https://doi.org/10.5334/cstp.96) Full-paper
- [11] Ponciano, Lesandro; Brasileiro, Francisco; Simpson, Robert; Smith, Arfon. **"Volunteers' Engagement in Human Computation for Astronomy Projects"**. *Computing in Science & Engineering*, v. 16, p. 52-59, 2014. DOI: [10.1109/MCSE.2014.4](https://doi.org/10.1109/MCSE.2014.4) Full-paper
- [12] Ponciano, Lesandro; Brasileiro, Francisco. **"Finding Volunteers' Engagement Profiles in Human Computation for Citizen Science Projects"**. *Human Computation*, v. 1, n. 1, p. 245-264, 2014. DOI: [10.15346/hc.v1i2.12](https://doi.org/10.15346/hc.v1i2.12) Full-paper
- [13] Ponciano, Lesandro; Brasileiro, Francisco; Andrade, Nazareno; Sampaio, Livia. **"Considering Human Aspects on Strategies for Designing and Managing Distributed Human Computation"**. *Journal of Internet Services and Applications*, v. 5, p. 1-28, 2014. DOI: [10.1186/s13174-014-0010-4](https://doi.org/10.1186/s13174-014-0010-4) Full-paper
- [14] Ponciano, Lesandro; Brasileiro, Francisco. **"Assessing Green Strategies in Peer-to-Peer Opportunistic Grids"**. *Journal of Grid Computing*, v. 11, p. 129-148, 2013. DOI: [10.1007/s10723-012-9218-3](https://doi.org/10.1007/s10723-012-9218-3) Full-paper
- [15] PONCIANO, Lesandro; Andrade, Nazareno; Brasileiro, Francisco. **BitTorrent traffic from a caching perspective.** *Journal of the Brazilian Computer Society*, v. 19, p. 475-491, 2013. DOI: [10.1007/s13173-013-0112-z](https://doi.org/10.1007/s13173-013-0112-z) Full-paper
- [16] PONCIANO, Lesandro; Brasileiro, Francisco; Gadelha, Guilherme. **Task Redundancy Strategy Based on Volunteers' Credibility for Volunteer Thinking Projects.** In: AAAI Conference on Human Computation and Crowdsourcing, 2013, Palm Springs. p. 60-61. Abstract
- [17] Ponciano, Lesandro; Brito, Andrey; Sampaio, Livia; Brasileiro, Francisco. **Energy-Efficient Computing through Productivity-Aware Frequency Scaling.** In: 2012 International Conference on Cloud and Green Computing (CGC), 2012, Xiangtan. 2012. p. 191-198. DOI: [10.1109/CGC.2012.59](https://doi.org/10.1109/CGC.2012.59) Full-paper
- [18] Alves, Luiz; Maciel, Matheus; Ponciano, Lesandro; Brito, Andrey. **Assessing the impact of the social network on marking photos as favorites in Flickr.** In: 18th Brazilian Symposium on Multimedia and the Web, 2012, São Paulo/SP. New York: ACM Press. p. 79-82. DOI: [10.1145/2382636.2382655](https://doi.org/10.1145/2382636.2382655) Full-paper
- [19] Ponciano, Lesandro; Brasileiro, Francisco. **On the impact of energy-saving strategies in opportunistic grids.** In: Energy Efficient Grids, Clouds and Clusters Workshop (E2GC2 2010), 2010, Brussels. 11th ACM/IEEE International Conference on Grid Computing (Grid 2010), 2010. v. 1. p. 282-289. DOI: [10.1109/GRID.2010.5698003](https://doi.org/10.1109/GRID.2010.5698003) Full-paper

Peer-reviewed Conference and Journal Publications *[Published in Portuguese]*

- [1] LOUZADA, HENRIQUE; CHAVES, GABRIEL; Ponciano, Lesandro. **Exploring user profiles based on their explainability requirements in interactive systems**. In: IHC '20: XIX Brazilian Symposium on Human Factors in Computing Systems, 2020, Diamantina Brazil. New York: ACM, 2020. p. 1-6. DOI: [10.1145/3424953.3426545](https://doi.org/10.1145/3424953.3426545) Full-paper
- [2] Ponciano, Lesandro. **"Structured Debate: A Pedagogical Strategy for Teaching and Learning Human Values in Human-Computer Interaction."** (Portuguese: Debate Estruturado: Uma Estratégia Pedagógica para Ensino e Aprendizagem de Valores Humanos em Interação Humano-Computador). In: Workshop on HCI Education, 2018. Anais Estendidos do XVII Simpósio Brasileiro de Fatores Humanos em Sistemas Computacionais (IHC). DOI: [10.5753/ihc.2018.4209](https://doi.org/10.5753/ihc.2018.4209) Full-paper
- [3] VALGAS, A.; CARMO, F.; Ponciano, Lesandro; GOES, L. **"Analysis of Popularity, Visibility and Activity of Different Types of Socialbots on Twitter Social Network"** (Portuguese: Análise da Popularidade, Visibilidade e Atividade de Diferentes Tipos de Robôs na Rede Social Twitter). In: XIV Simpósio Brasileiro de Sistemas Colaborativos, 2017, São Paulo. XXXVII Congresso da Sociedade Brasileira de Computação. Porto Alegre: Sociedade Brasileira de Computação, 2017. v. 1. p. 1342-1355. DOI: [10.5753/sbcs.2017.9958](https://doi.org/10.5753/sbcs.2017.9958) Full-paper
- [4] RAMOS, S. L. ; Góes, Luiz Fabrício; Ponciano, Lesandro; FRANCA, C.; MORAIS, H. . **"Assessing Players' Perception of Hearthstone Digital Card Game Combo Creativity"** (Portuguese: Avaliação da Percepção de Jogadores sobre a Criatividade de Combos do Jogo Digital de Cartas Hearthstone). In: Simpósio Brasileiro de Jogos e Entretenimento Digital (SBGames), Porto Alegre: SBC, 2016. p. 190-193. Short-paper
- [5] Ponciano, Lesandro; Brasileiro, Francisco; Gadelha, Guilherme; Furtado, Adabriand. **Adaptive Task Replication Strategy for Human Computation**. In: 2014 Brazilian Symposium on Computer Networks and Distributed Systems (SBRC), 2014, Florianopolis. p. 249-257. DOI: [10.1109/SBRC.2014.30](https://doi.org/10.1109/SBRC.2014.30) Full-paper
- [6] Oliveira, Jeymisson; Ponciano, Lesandro; Andrade, Nazareno; Brasileiro, Francisco. **"Strategies for obtaining a maximum item in Human Computation"** (Portuguese: Estratégias de obtenção de um item máximo em Computação por Humanos). In: XXXI Simpósio Brasileiro de Redes de Computadores e Sistemas Distribuídos (SBRC 2013), 2013, Brasília. Porto Alegre: SBC, 2013. p. 253-266. Full-paper
- [7] ARAÚJO, E. C.; Gaudencio, Matheus; Menezes, Andrey; Ferreira, Iury; Ribeiro, Iara; Fagner, Alberto; Ponciano, Lesandro; Morais, Fábio; Guerrero, Dalton; Figueiredo, Jorge. **"The Role of Study Habits in Student Programming Performance"** (Portuguese: O papel do hábito de estudo no desempenho do aluno de programação). In: Workshop sobre Educação em Computação (WEI), 2013, Maceió. Congresso da Sociedade Brasileira da Computação (CSBC). Porto Alegre: Sociedade Brasileira da Computação, 2013. p. 730-738. Full-paper
- [8] Ponciano, Lesandro; Santana, Jaíndson; Carvalho, Marcus; Gaudêncio, Matheus; Brasileiro, Francisco. **"Analysis of Green Computing Strategies in Opportunistic Computational Grids"** (Portuguese: Análise de Estratégias de Computação Verde em Grades Computacionais Oportunistas). In: XXVIII Simpósio Brasileiro de Redes de Computadores (SBRC), 2010, Gramado. Porto Alegre, Brasil: SBC, 2010. v. 1. p. 307-320. Full-paper
- [9] Ponciano, Lesandro; Brasileiro, Francisco; Santana, Jaíndson; Carvalho, Marcus; Gaudêncio, Matheus. **"Using Standby and Hibernate Strategies to Save Energy on Opportunistic Computational Grids."** (Portuguese: Usando as Estratégias Sobreaviso e Hibernação para Economizar Energia em Grades Computacionais Oportunistas). Revista Brasileira de Redes de Computadores e Sistemas Distribuídos, v. 3, p. 9-20, 2010. Full-paper

Scientific Journal Service

- 2022, reviewer for **PeerJ** journal
- 2022, reviewer for **IEEE Transactions on Cloud Computing** journal
- 2021, reviewer for **Frontiers in Psychology** journal
- 2021, reviewer for **Frontiers in Ecology and Evolution** journal
- 2019, reviewer for **SBC Journal on 3D Interactive Systems** journal
- 2014, reviewer for **IEEE Transactions on Human-Machine Systems** journal
- 2015-2018, reviewer for **Journal of Science Communication**
- 2015-2016, reviewer for **Human Computation** journal
- 2013-2016, reviewer for **IEEE Computing in Science & Engineering** journal

Scientific Society and Association Activities

- Since 2017, member of the **Brazilian Computer Society (SBC)**, Brazil.
- Since 2019, member of the **Brazilian Society for the Advancement of Science (SBPC)**, Brazil.
- Since 2019, member of the **Iberoamerican Network of Participatory Science (RICAP)**, Colombia.
- From 2015 until 2020, member of the **Citizen Science Association (CSA)**, United States.

Scientific Conference Activities

Technical Program Committee

- 2021-2024: **ACM International Conference on Supporting Group Work (GROUP)**.
- 2021: **Ibero-American Conference on Human-Computer Interaction**.
- 2018 - 2021: **Brazilian Symposium on Human Factors in Computer Systems (IHC)**.
- 2017-2021: **Brazilian Symposium on Collaborative Systems (SBSC)**.
- 2021: **Brazilian Symposium on Computer Education (EduComp)**.
- 2020: **Contest for Scientific Initiation Papers in Software Engineering (CTIC-ES)** of the Brazilian Symposium on Software Engineering (SBES).

External Reviewer

- 2022: **ACM CHI Conference**. Case study papers.
- 2019-2020: **ACM CHI Conference**. Full Papers.
- 2014: **IEEE International Conference on Distributed Computing Systems (ICDCS)**
- 2011: **Workshop on P2P, Dynamic, Social and Content Oriented Networks (SBRC - Wp2p+)**
- 2011: **Symposium on Computer Systems (WSCAD-SSC)**
- 2011: **Scientific Initiation Workshop in Computer Architecture and High-Performance Computing (WSCAD-WIC)**

Attendee

- 2021 - International Conference on Discovery Science - Online
- 2021 - Brazilian Symposium on Computer Education - Online
- 2020 - European Citizen Science Conference - Online
- 2020 - Brazilian Symposium on Human Factors in Computing Systems - Online
- 2019 - Brazilian National Science and Technology Week - Ponte Nova/Brazil
- 2018 - Brazilian Symposium on Human Factors in Computing Systems - Belém/Brazil
- 2017 - Citizen Science Association Conference - Twin Cities/USA
- 2017 - Brazilian Symposium on Human Factors in Computing Systems - Joinville/Brazil
- 2017 - Congress of the Brazilian Computer Society - São Paulo/Brazil
- 2014 - IEEE International Conference on eScience - São Paulo/Brazil
- 2014 - Brazilian Symposium on Computer Networks and Distributed Systems - Florianópolis/Brazil
- 2013 - AAAI Conference on Human Computation and Crowdsourcing - Palm Spring/ USA
- 2012 - Congress of the Brazilian Computer Society - Curitiba/Brazil
- 2010 - IEEE/ACM International Conference on Grid Computing - Brussels/Belgium
- 2010 - Brazilian Symposium on Computer Networks and Distributed Systems - Gramado/Brazil
- 2007 - IEEE International Symposium on Computer Architecture and High-Performance Computing - Gramado/Brazil

Scientific Impact (data from May 2023)

- [Google Scholar](#): total citations 114 • h-index 10 • i10-index 11.
- [Scopus](#): total citations 106 • h-index 5
- [Web of Science](#): total citations 56 • h-index 4

Teaching Courses

<u>Course</u>	<u>Duration</u>	<u>Frequency/year</u>	<u>Program</u>	<u>University</u>
Human-Computer Interaction	68 hours over 4 months	Semiannually from 2016 until 2024	Software Engineering	PUC Minas
Introduction to Informatics Research	34 hours over 4 months	Semiannually from 2020 until 2024	Software Engineering	PUC Minas
Software Testing	68 hours over 4 months	Semiannually from 2020 until 2021	Software Engineering	PUC Minas
Requirements Engineering	68 hours over 4 months	Semiannually from 2017 until 2019	Information System	PUC Minas
Software Quality	68 hours over 4 months	Semiannually from 2017 until 2020	Information System	PUC Minas
Operating Systems	68 hours over 4 months	Semiannually from 2017 until 2024	Software Engineering	PUC Minas
Information Systems Design	68 hours over 4 months	2019, 2024	Information System	PUC Minas
Distributed Application Development	68 hours over 4 months	2019	Information System	PUC Minas
Computer Architecture	68 hours over 4 months	2017	Computer Science	PUC Minas
Computer Programming	68 hours over 4 months	2016	Electrical Engineering	PUC Minas
Algorithms and Data Structure	68 hours over 4 months	2016	Information System	PUC Minas

Plus sporadic 68 hours courses: **Information Systems Design** (2019).
