

CURRICULUM VITAE

Alex Stephan Villazón Torrico, Ph.D.

GENERAL INFORMATION

Position Full Professor, Dean for Research of the Faculty of Engineering and Architecture, and Director of the CINTI Research Center

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EDUCATION

2007-2009 Post-doctoral Researcher, Dynamic Analysis Group. Faculty of Informatics, Università della Svizzera italiana (USI), Lugano, Switzerland.
<https://dag.inf.usi.ch/former-researchers>

2003-2007 Post-doctoral Researcher, Distributed and Parallel Systems Group. Institute of Computer Science. University of Innsbruck (UIBK), Austria
<https://dps.uibk.ac.at/former-members/>

2002 Ph.D. in Computer Science, Thesis: A Reflective Architecture for Mobile Code Environments. University of Geneva, Switzerland <https://doi.org/10.13097/archive-ouverte/unige:139854>

1997 MSc. in Computer Science, University of Geneva, Switzerland

ACADEMIC AND PROFESSIONAL EXPERIENCE

2024-now Dean for Research of the Faculty of Engineering and Architecture, UPB, Bolivia.

2023-now Project Coordinator of the Erasmus+ CBHE Project “EU-BEGP” funded by the European Commission (2023-2026). UPB, Bolivia. (800'000 EUR)

2021-now Main Contact Person at UPB in the Erasmus+ CBHE Project “EUBBC-Digital” funded by the European Commission (2021-2024). UPB, Bolivia. (1M EUR)

2019-now President of the Ethics and Transparency Committee - Comité de Ética y Transparencia (CET), Universidad Privada Boliviana (UPB), Bolivia.

2016-now Full Professor, Universidad Privada Boliviana (UPB), Bolivia

2010-now Undergraduate Lecturer. Universidad Privada Boliviana (UPB), Bolivia

- Computer Networks, Distributed Systems, Operating Systems, Introduction to Technology Development and Innovation

2010-now Postgraduate Lecturer. Universidad Privada Boliviana (UPB), Bolivia

- Information Technology and Systems Management (Master’s in Business Administration – Full MBA)

2014-now Bolivian National Contact Point (NCP) for Information and Communication Technology (ICT) of the EU Programmes Horizon-2020 (H-2020) y Horizon Europe

2010-now Director of the CINTI Research Center - Centro de Investigaciones de Nuevas Tecnologías Informáticas (CINTI), UPB, Bolivia

2014-2016 Invited Lecturer – Vice ministry of Science and Technology. Workshops on Scientific Articles Writing. Bolivia (Cochabamba, La Paz, Pando, Sucre, Tarija).

2013-2014 Visiting researcher in “Dynamic Program Analysis”. Faculty of Informatics, , Università della Svizzera italiana (USI). Lugano, Switzerland (6 months).

- 2011 Visiting researcher in “Virtual Machines and Cloud Computing”. Faculty of Informatics, Università della Svizzera italiana (USI). Lugano, Switzerland (5 months).
- 2010-2013 Software Development leader. Project “Subcontracting Partnership Exchange (SPX)” funded by the United Nations Industrial Development Organization (UNIDO). Project implemented at UPB.
- 2013 Software Development Leader. Project “Survey Processing and Analysis Engine (SANG)” funded by the United Nations Industrial Development Organization (UNIDO). Project implemented at UPB.
- 2010-2016 Associate Professor, Universidad Privada Boliviana (UPB), Bolivia
- 2007-2009 Post-doctoral Researcher, Faculty of Informatics, Università della Svizzera italiana (USI). Lugano, Switzerland
- 2004-2007 Lecturer of Software Development (*Software Entwicklung*) at the University of Innsbruck - Leopold-Franzens-Universität Innsbruck, Innsbruck, Austria.
- 2003-2007 Post-doctoral Researcher. Institute of Computer Science. Universidad de Innsbruck, - Leopold-Franzens-Universität Innsbruck, Innsbruck, Austria
- 2002-2003 Project Manager, Development of an Enterprise Resource Planning - ERP. Hysis S.A., Geneva, Switzerland.
- 1997-2002 Research Assistant and PhD candidate. University of Geneva, Geneva, Switzerland.

PUBLICATIONS Y PATENTS

Publications in Google Scholar (Jan 2024)

Number of Publications: **113** H-Index: **23** Citations: **2'275**

<https://scholar.google.com/citations?user=Gq3EBzZkbhQC>

Publications in Scopus (Jan 2024)

Number of Publications: **71** H-Index: **18** Citations: **1'112**

<https://www.scopus.com/authid/detail.uri?authorId=6602133964>

- 2023 **Patent:** “Dispositivo Portátil Espectrométrico Basado en Teléfonos Inteligentes para la identificación de Sustancias y la medición de Absorbancia y Transmitancia”. SENAPI (National Service of Intellectual Property), 03 Mar 2023. Patent Number: 7252-B. Inventors: Omar Ormachea y Alex Villazón.

From the list of publications, publications of the last 5 years:

PUBLICATION
A Villazón. Plenary: Modernizing Collaborative Digital Education in Emerging Regions with Active Learning Methodologies. 2024 IEEE World Engineering Education Conference (EDUNINE), Guatemala City, Guatemala, 2024, pp. 1-2, https://doi.org/10.1109/EDUNINE60625.2024.10500623
A Gamboa, A Villazón, A Meneses, O Ormachea, R Orellana. Altitude's Impact on Photovoltaic Efficiency: An IoT-Enabled Geographically Distributed Remote Laboratory. In: Auer, M.E., Langmann, R., May, D., Roos, K. (eds) Smart Technologies for a Sustainable Future. STE 2024. Lecture Notes in Networks and Systems, vol 1028. Springer, Cham. https://doi.org/10.1007/978-3-031-61905-2_14
B Pedraza, A Villazón, O Ormachea. Enhancing Accessibility for Real-Time Remote Laboratories: A Web-Based Solution with Automated Validation and Access Control. In: Auer, M.E., Langmann, R., May, D., Roos, K. (eds) Smart Technologies for a Sustainable

Future. STE 2024. Lecture Notes in Networks and Systems, vol 1028. Springer, Cham. https://doi.org/10.1007/978-3-031-61905-2_21
A. Villazón, O. Ormachea, A. Orellana, A. Zenteno, T. Fransson. Work in Progress: A Booking System for Remote Laboratories – The EXPLORE Energy Digital Academy (EEDA) Case Study. In: Auer, M.E., Langmann, R., Tsiatsos, T. (eds) Open Science in Engineering. REV 2023. Lecture Notes in Networks and Systems, vol 763. Springer, Cham. https://doi.org/10.1007/978-3-031-42467-0_31
A. Zenteno, A. Orellana, A. Villazón and O. Ormachea. Automatic Selection of Reference Lines for Spectrometer Calibration with Recurrent Neural Networks. In: Narváez, F.R., Urgilés, F., Bastos-Filho, T.F., Salgado-Guerrero, J.P. (eds) Smart Technologies, Systems and Applications. SmartTech-IC 2022. Communications in Computer and Information Science, vol 1705. Springer, Cham. 2022. https://doi.org/10.1007/978-3-031-32213-6_8
O. Ormachea, A. Villazón, P. Rodriguez, M. Zimic. A Smartphone-Based Low-Cost Inverted Laser Fluorescence Microscope for Disease Diagnosis. <i>Biosensors</i> . 12(11):960. 2022. https://doi.org/10.3390/bios12110960
O. Ormachea, A. Villazon, and O. Oporto. Design and construction of a low-cost 3D-printed portable LIBS system. <i>Journal of Physics: Conference Series</i> , Volume 2238. 2022. https://doi.org/10.1088/1742-6596/2238/1/012012
E. Rosales, A. Rosà, M. Basso, A. Villazón, A. Orellana, A. Zenteno, J. Rivero, W. Binder. Characterizing Java Streams in the Wild," 2022 26th International Conference on Engineering of Complex Computer Systems (ICECCS), Hiroshima, Japan, pp. 143-152, 2022. https://doi.org/10.1109/ICECCS54210.2022.00025
A. Villazon, O. Ormachea, A. Zenteno, A. Orellana, A. Low-Cost Spectrometry Remote Laboratory. In: Auer, M.E., El-Seoud, S.A., Karam, O.H. (eds) Artificial Intelligence and Online Engineering. REV 2022. Lecture Notes in Networks and Systems, vol 524. Springer, Cham. 2022. https://doi.org/10.1007/978-3-031-17091-1_21
A. Villazón, H. Sun, A. Rosà, E. Rosales, D. Bonetta, I. Defilippis, S. Oporto, and W. Binder. NAB: automated large-scale multi-language dynamic program analysis in public code repositories. In Proceedings Companion of the 2019 ACM SIGPLAN International Conference on Systems, Programming, Languages, and Applications: Software for Humanity (SPLASH Companion 2019). ACM, New York, NY, USA, 9–10. 2019. https://doi.org/10.1145/3359061.3362777
A. Prokopec, A. Rosà, D. Leopoldseder, G. Duboscq, P. Tůma, M. Studener, L. Bulej, Y. Zheng, A. Villazón, D. Simon, T. Würthinger, and W. Binder. Renaissance: benchmarking suite for parallel applications on the JVM. In Proceedings of the 40th ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI 2019). ACM, New York, NY, USA, 31–47. 2019. https://doi.org/10.1145/3314221.3314637
O. Javed, A. Villazón, and W. Binder. JUnitVerse: large-scale JUnit-test analysis in the wild. In Proceedings of the 34th ACM/SIGAPP Symposium on Applied Computing (SAC '19). ACM, New York, NY, USA, 1768–1775. 2019. https://doi.org/10.1145/3297280.3297453
A. Villazón, H. Sun, A. Rosà, E. Rosales, D. Bonetta, I. Defilippis, S. Oporto, and W. Binder. Automated Large-Scale Multi-Language Dynamic Program Analysis in the Wild (Artifact). In Special Issue of the 33rd European Conference on Object-Oriented Programming (ECOOP 2019). Dagstuhl Artifacts Series (DARTS), Volume 5, Issue 2, pp. 11:1-11:3, Schloss Dagstuhl – Leibniz-Zentrum für Informatik, 2019 https://doi.org/10.4230/DARTS.5.2.11

CONFERENCES AND SCIENTIFIC EVENTS

Continuous engagement in Conferences, Symposia, and scientific events since 1991. The following include only those of the last 5 years.

- 2024 - VIII IEEE World Engineering Education Conference (EDUNINE) 10-13 March 2024, Guatemala City, Guatemala.
<https://edunine.eu/edunine2024/program/EDUNINE2024ProgramMONDAY.pdf>

- 12th Bolivian Engineering and Technology Congress – BETCON 2024. 24-27 April 2024, Cochabamba, Bolivia
 - 1st International Congress in Engineering and Science (CIIC) 2024, 27-28 June 2024, Cochabamba, Bolivia.
- 2023
- 20th International Conference on Remote Engineering and Virtual Instrumentation (REV-2023) 1-3 Mar 2023. Thessaloniki, Greece.
https://www.conftool.com/rev-conference/index.php?page=browseSessions&form_session=406#paperID1279
 - EUBBC-Digital M33 Meeting, 20-24 Nov, Cochabamba Bolivia
 - XI Iberoamerican Optics Meeting/ XIV Latinamerican Meeting on Optics, Lasers and Applications RIAO/OPTILAS 2023. 01-03 Mar 2023, Costa Rica
- 2022
- 19th International Conference on Remote Engineering and Virtual Instrumentation (REV-2022), 28 Feb – 03 Mar 2022, Cairo, Egypt. <https://ste-conference.org/REV2022/documents/program.pdf>
 - International Conference on Engineering of Complex Computer Systems (ICECCS 2022), 26-30 Mar 2022. Hiroshima, Japan.
http://iceccs2022.xsrv.jp/ICECCS2022WholeConferenceProgram_FinalforUse_WithZoomURL_videoPresentationLink.pdf
 - Explore Energy Sri Lanka (EUSL-Energy) 2022, 7-11 Mar 2022, Sri Lanka
 - EUBBC-Digital – EUSL-Energy Joint Meeting, 13-17 Jun 2022, Enschede, The Netherlands <https://sites.google.com/view/eusl-energy-m30-eubbc-digital-/home>
 - 3th International Conference on Smart Technologies, Systems and Applications SmartTech – IC 2022, 16-18 Nov 2022, Cuenca, Ecuador.
<https://www.smartechic.org/program.html>
 - EUBBC-Digital – M21 Meeting, 21-26 Nov 2022, Cayo Santa Maria, Cuba
- 2019
- Invited speaker “Innovation and Artificial Intelligence”. Panel Discussion on Technology and Innovation, 03 May 2019, Cochabamba, Bolivia
 - International Conference on Programming Language Design and Implementation (PLDI) 2019, 22-26 Jun 2019, Phoenix, Arizona, USA.
<https://pldi19.sigplan.org/track/pldi-2019-papers#event-overview>
 - Invited speaker at “1er Panel Discussion on Digital Cluster”, 10 Jul 2019, Cochabamba, Bolivia
 - “Study Visit Barcelona Supercomputing Center”, 19-20 Jun 2019, Barcelona, Spain
 - European Conference on Object-Oriented Programming (ECOOP) 2019, 15-19 Jul 2019, London, UK <https://2019.ecoop.org/track/ecoop-2019-papers#program>
 - Invited speaker at “Experience in Advocacy for Public Policies in Science, Technology, and Innovation”. INNOVA-UMSS Programme. 16 Jul 2019, Cochabamba, Bolivia
 - 2nd “Discussion Panel on Digital Cluster”, 09 Aug 2019, Cochabamba, Bolivia
 - Plurinational Science and Technology Award, 23-26 Sep 2019. Tarija, Bolivia
- 2018
- Invited speaker “National Science, Technology, and Innovation Bill Proposal.” Discussion Panel on the Science, Technology, and Innovation Citadel. 20 Jun 2018, Cochabamba, Bolivia
 - Invited speaker at “Development of Low-Cost Photonic Devices for the Diagnosis of Infectious Diseases”, IIBISMED Seminar, 28 Oct 2018, Cochabamba, Bolivia
 - International Symposium on Leveraging Applications of Formal Methods, Verification and Validation (ISoLA’18), 30 Oct – 13 Nov 2018. Limassol, Chipre
<https://2018.isola-conference.org/programme.html>

FUNDED PROJECTS

- 2022 Erasmus+ CBHE Project “EU-BEGP Modernising Digital Education in Energy Transition for Circular Economy in Latin America”. Total funding: 800'000 EUR. **Role in the project: Coordinator of the project.**
- 2021 Erasmus+ CBHE Project “EUBBC-Digital Europe-Brazil-Bolivia-Cuba Capacity Building Using Globally Available Digital Learning Modules”. Total funding: 999'596 EUR. **Role in the project: Main Contact Person of UPB.**
- 2010-2013 Project “Subcontracting Partnership Exchange (SPX)”. Funded by the United Nations Industrial Development Organization (UNIDO). Total funding: 100'000 EUR. **Role in the project: Software Development Leader.**
- 2013 Project “Survey Processing and Analysis Engine (SANG)”. Funded by the United Nations Industrial Development Organization (UNIDO). Total funding: 50'000 EUR. **Role in the Project: Software Development Leader.**

AWARDS

- 2024 GOLC (Global Online Laboratory Consortium) – **GOLC International Online Lab Award.** 2nd place in Remote Laboratories. Geographically Distributed Remote Laboratory for Photovoltaic Energy Efficiency studies based on altitudes. March 2024. Helsinki, Finland.
- 2023 The 2022 **AOSA International Award** to the “Most influential article in the las 10 years.: DiSL: A Spective Language for Bytecode Instrumentation. Received 16th of March 2023, Tokyo, Japan. <https://aosa-inc.org/awards/>
- 2023 Research Award (Premio Buho) 2023, Universidad Privada Boliviana (UPB)
- 2022 Research Award (Premio Buho) 2022, Universidad Privada Boliviana (UPB)
- 2021 Plurinational Science and Technology Award - Premio Plurinacional de Ciencia y Tecnología. Medal to distinguished jury member. 21 Dec 2021. La Paz, Bolivia.
- 2021 Research Award (Premio Buho) 2021, Universidad Privada Boliviana (UPB)
- 2019 1st Place. Plurinational Science and Technology Award – 6th Edition. Health and Pharmaceutical Industry Category. Ministry of Education (Tarija, Bolivia) <https://pagina.upb.edu/es/contenido/upb-recibe-6-premios-en-el-premio-plurinacional-de-ciencia-y-tecnolog%C3%ADa-2019-%E2%80%936ta-versi%C3%B3n>
- 2018 Honorable Mention. Plurinational Science and Technology Award – 5th Edition. Energy and Hydrocarbons Category. 5-7 Nov 2018 (Sucre Bolivia). <https://pagina.upb.edu/es/contenido/proyectos-de-investigaci%C3%B3n-de-la-upb-son-premiados-en-el-premio-plurinacional-de-ciencia-y>
- 2017 **Scientific Exchange Award.** Swiss National Foundation (SNF), “Cloud-based Dynamic Program Analysis for Android Devices”. Scientific visit at University of Lugano, Switzerland. Grant Number: IZSEZ0_177215. <https://data.snf.ch/grants/grant/177215> (01 Aug 2017 to 31 May 2018).
- 2017 1st Place. Plurinational Science and Technology Award – 4th Edition. Industrial Transformation Category. Ministry of Education (La Paz, Bolivia) <https://pagina.upb.edu/es/contenido/upb-gana-primer-lugar-en-4-categor%C3%ADas-de-la-iv-versi%C3%B3n-del-premio-plurinacional-de-ciencia>
- 2017 1st Place. Plurinational Science and Technology Award – 4th Edition. Health and Pharmaceutical Industry Category. Ministry of Education (La Paz, Bolivia)
- 2016 2nd Place. Plurinational Science and Technology Award – 3th Edition. Industrial Transformation Category. Ministry of Education (La Paz, Bolivia)

2016	Honorable Mention. Plurinational Science and Technology Award – 3 th Edition Health and Pharmaceutical Industry Category. Ministry of Education (La Paz, Bolivia)
2015	1 st Place. Plurinational Science and Technology Award – 2 nd Edition. Energy Category. Ministry of Education (La Paz, Bolivia) http://www.upb.edu/es/contenido/premio-plurinacional-de-ciencia-y-tecnolog%C3%ADa
2015	2 nd Place. Plurinational Science and Technology Award – 2 nd Edition. Information and Communication Technology Category. Ministry of Education (La Paz, Bolivia) http://www.upb.edu/es/contenido/premio-plurinacional-de-ciencia-y-tecnolog%C3%ADa
1990	Full scholarship from the Simón I. Patiño Foundation (Geneva, Switzerland) for undergraduate and postgraduate studies at the University of Geneva, Switzerland.

MEMBERSHIP IN PROFESSIONAL ASSOCIATIONS

- Member of the **Institute of Electrical and Electronics Engineers (IEEE)** Member number :93782164.
- Member of the **Association of Computer Machinery (ACM)**. Member number: 4143828
- Member of the jury of the Plurinational Science and Technology Award. Information and Communication Technology Category. 2020 and 2021.
- Member of the jury of the **MIT Technology Review: Innovators Under 35 – Europe and Latin America** (2016, 2017, 2018, 2019)
<https://www.innovatorsunder35.com/regions/europe/judges2019/>
- Member of the Board of Directors of the “**Consortio Académico de Acceso y Uso de Recursos de Información para la Investigación CAAURII**” – Viceministry of Science and Technology (2017-2019)
- Member of the Science, Technology and Innovation Regional Council “**Consejo Departamental de Ciencia, Tecnología e Innovación**” (2017-2019)
- Member of the **Program Committee of International Conferences**: MODULARITY’14: (Lugano, Switzerland). SC’2013: (Budapest. Hungary). PPPJ’13 (Stuttgart, Germany). GPCE’12 (Dresden, Germany).
- **Reviewer of Journals** : Software: Practice and Experience (Wiley), Automated Software Engineering (Springer), Computer & Electrical Engineering (Elsevier), Computer and Informatics Journal.

LANGUAGES

Spanish: Native

French: Fluent (C2)

English: Fluent (C2)

Italian: Intermediate (A2)

German: Elementary (A1)