

Agustina Pesce Lopez

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Personal Information

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ORCID: 0000-0002-5538-8845

Education

2014 - 2019 **PhD in Geophysics**, *Facultad de Ciencias Exactas, Físicas y Naturales, Universidad Nacional de San Juan, Argentina*

2005 - 2014 **Licentiate in Physics**, *Facultad de Ciencias Exactas, Ingeniería y Agrimensura, Universidad Nacional de Rosario, Argentina*

Professional Appointments

Since June 2022 **Maintainer of one of the core lessons of The Carpentries**
Análisis y visualización de datos usando Python

Since Nov. 2021 **Coding Coordinator and Trainer** in Code to Communicate Program (CoCo).
CoCo is a NSF-funded bilingual program for grad-student

Key responsibilities:

- Creating the content which will be taught during the coding sessions
- Participating in biweekly discussions to go over pending items on the list
- Participate in course content development meetings
- Translation of different documents
- Different tasks to create a good foundation for this program
- Teach the course content
- Attend the trainers orientation session

2019 - March 2022 **Assistant Professor of practice**, Geology Department, **FCEyN**, Universidad Nacional de San Juan, Argentina

Key responsibilities:

- Lead, supervise and evaluate student work and laboratory practices
- Help with the course preparatio and participate un the teaching courses
- Be responsible for the preparation and conservation of the laboratory material
- Teach practical classes if the Professor requires it
- Attend and collaborate in the final exams

2019 - March 2022 **Postdoctoral Researcher**, **Instituto Geofísico Sismológico Volponi**
Influence of a mantle plume in subduction zones by geodynamics numerical models

Advisor: Dr. Victor Sacek (**IAG-USP**)

Awards and Scholarships

2019 - 2022	Postdoctoral Scholarship from CONICET
2014 - 2019	Phd scholarship from CONICET
2015	Travel grants: SEG/ExxonMobil Student Education Program (SEP), New Orleans, EE.UU.

Certifications

2022	Maintainer for The Carpentry
2021	Certified Carpentry Instructor

Open-source Software

Software Engineer and Data Scientist Experience

2020	Dashboard using Python and GitHub pages <i>A COVID-19 data visualization</i> <ul style="list-style-type: none"> • Design and development of the libraries • Automated deployment of the website through GitHub Actions
2020	Dashboard using plotly and herokuapp <i>A COVID-19 data visualization</i> <ul style="list-style-type: none"> • Design and development of the libraries • Automated deployment of the website
Since 2019	MANDYOC <i>Open source tool to simulate the mantle dynamics</i> <ul style="list-style-type: none"> • Automated deployment of the documentation website through GitHub Actions • Community building (license, code of conduct, how to contribute guidelines, Readme) • Wrote a Makefile for building and installing
Since 2019	tapIOca <i>Tools for transforming output files from Mandyoc code to dataset</i> <ul style="list-style-type: none"> • Design and development of the library and its API
Since 2016	Fatiando a Terra <i>Open source tools for geophysics</i> <ul style="list-style-type: none"> • Implementation of new methodologies with unit tests and documentation • Improvement of the main website project • Maintenance tasks (CI fixes, automation of tasks) • Active participation on Developers and Community meetings

Web design and Development

Diana Acero	Personal website.
Geolatinas coding group	A website to show what the coding group is and their activities.
Dashboard	A COVID-19 data visualization from Argentina.

Dashboard	Dashboard for Argentina COVID-19 data using <i>plotly</i> and <i>dash</i> .
Garabatos	A site for my paintings.
CromoGráfica	Business website currently under development.

Teaching

Undergraduate Courses

2019 - 2022	Assistant professor in Physics I , Departamento de Geología, FCEyN, Universidad Nacional de San Juan
2019 - 2022	Assistant professor in Physics II , Departamento de Geología, FCEyN, Universidad Nacional de San Juan

Workshops and Tutorials

2022	Mandyoc: A finite element code to simulate thermochemical convection in parallel presented at <i>Transform 2022</i> https://www.youtube.com/watch?v=wzrIF4zpshM&feature=emb_title
2022	Introduction to Python for <i>CoCo Program</i> https://github.com/CodeToCommunicate/CoCoLessons
2021	Introduction to Git and GitHub for <i>GeoLatinas</i> https://github.com/GeoLatinas/intro-to-git-2021
2021	Tutorial: Processing gravity data with Harmonica presented at <i>Transform 2020, Software Underground</i> https://github.com/fatiando/transform21
2020	How to manage multi-dimensional arrays? Online seminar of the laboratorio de tectonofísica from <i>IAG-USP</i> https://github.com/aguspesce/online_seminar_IAG-USP
2017	Introductory course to LaTeX: How to produce high quality documents , Secretaría de Extensión, Facultad de Ciencias Exactas, Físicas y Naturales, Universidad Nacional de San Juan, Argentina https://santisoler.github.io/teaching/latex.html

Publications

Peer-reviewed papers

2022	Mandyoc: A finite element code to simulate thermochemical convection in parallel , <i>Journal of Open-Source Software</i> , 7(71), 4070 Sacek, V; Assunção, J; Pesce, A; Monteiro da Silva, R https://joss.theoj.org/papers/10.21105/joss.04070.pdf
2021	Sección eléctrica cortical a través de la fosa de Loncopué , <i>Revista de la Asociación Geológica Argentina</i> 78 (2), 333-337 Pesce, A; Giménez, M; Bibiana, C; Gianni, G; Folguera, A https://revista.geologica.org.ar/raga/article/view/246
2020	Oligocene to present shallow subduction beneath the southern Puna

- plateau**, *Tectonophysics*
Gianni, G. M; García, H; Pesce, A; Lupari, M; González, M; Giambiagi, L.
doi: [10.1016/j.tecto.2020.228402](https://doi.org/10.1016/j.tecto.2020.228402)
- 2019 **The subduction of the Copiapó aseismic ridge, is the causing of the formation of metallic minerals deposits in north of Chile and Argentina?**, *Geodesy and Geodynamics*
Gimenez, M; Acosta, G; Alvarez, O; Pesce, A; Lince Kinger, F; Folguera A.
doi: [10.1016/j.geog.2019.04.007](https://doi.org/10.1016/j.geog.2019.04.007)
- 2019 **Gravitational field calculation in spherical coordinates using variable densities in depth**, *Geophysical Journal International*
Soler, S; Pesce, A; Gimenez, M; Uieda, L.
doi: [10.1093/gji/ggz277](https://doi.org/10.1093/gji/ggz277)
- 2019 **Magnetic characterization of a retroarc extensional basin: The Loncopué Trough**, *Journal of South American Earth Sciences*
Pesce, A; Gianni, G; Giménez, M. E; Folguera, A
doi: [10.1016/j.jsames.2018.11.00](https://doi.org/10.1016/j.jsames.2018.11.00)
- 2019 **Modelo preliminar 3-D de susceptibilidad magnética del volcán Tromen**, *Revista de la Asociación Geológica Argentina*, 76(1), 687-692.
Pesce, A; Lupari, M; Gianni, G; Nacif, S; Gimenez, M
<https://revista.geologica.org.ar/raga/article/view/129>
- 2018 **Modelado gravimétrico 3D de la Corteza Superior de la subcuenca Palauco y alrededores, sur de Mendoza, Argentina**, *Revista de la Asociación Geológica Argentina*, 75(4), 584-591.
Lupari, M; Pesce, A; Leiva, F; Gonzales, M. A; Nacif, S; Alvarez, O; Gimenez, M; Lavecchia, J; Folguera, A
<https://ppct.caicyt.gov.ar/index.php/raga/article/view/13112>
- 2018 **Transient plate contraction between two simultaneous slab windows: Insights from Paleogene tectonics of the Patagonian Andes**, *Journal of Geodynamic*
Gianni, G; Pesce, A; Soler, S. R
doi: [10.1016/j.jog.2018.07.008](https://doi.org/10.1016/j.jog.2018.07.008)
- 2018 **Intraplate seismicity recorded by a local network in the Neuquen Basin Argentina**, *Journal of South American Earth Sciences*
Correa-Otto, S; Nacif, S; Pesce, A; Nacif, A; Gianni, G; Furlani, R; Giménez, M; Ruiz, F
doi: [10.1016/j.jsames.2017.12.007](https://doi.org/10.1016/j.jsames.2017.12.007)
- 2018 **3-D crustal-scale gravity model of the San Rafael Block and Payenia volcanic province in Mendoza, Argentina**, *Geoscience Frontiers*
Richarte, D; Lupari, M; Pesce, A; Nacif, S; Gimenez, M
doi: [10.1016/j.gsf.2017.03.004](https://doi.org/10.1016/j.gsf.2017.03.004)
- 2017 **Plume overriding triggers shallow subduction and orogeny in the Southern Central Andes**, *Gondwana Research*
Gianni, G; García, H; Lupari, M; Pesce, A; Folguera, A
doi: [10.1016/j.gr.2017.06.011](https://doi.org/10.1016/j.gr.2017.06.011)
- 2017 **Analysis of the Illapel Mw=8.3 thrust earthquake rupture zone using**

GOCE derived gradients, *Pure and Applied Geophysics*

Álvarez, O; Pesce, A; Gimenez, M; Folguera, A; Soler, S; Wenjin Chen

doi: [10.1007/s00024-016-1376-y](https://doi.org/10.1007/s00024-016-1376-y)

Books Chapters

- 2020 **Pliocene to Quaternary Retroarc Extension in the Neuquén Basin: Geophysical Characterization of the Loncopué Trough, *Opening and closure of the Neuquén Basin in the Southern Andes, Springer***
Pesce, A; Gianni, G; Giménez, M. E; Folguera, A
doi: [10.1007/978-3-030-29680-3](https://doi.org/10.1007/978-3-030-29680-3)
- 2020 **Plume Subduction Beneath the Neuquén Basin and the Last Mountain Building Stage of the Southern Central Andes, *Opening and Closure of the Neuquén Basin in the Southern Andes, Springer***
Gianni, G; Pesce, A; García, H. P. A; Lupari, M; Correa-Otto, S; Nacif, S; Folguera, A
doi: [10.1007/978-3-030-29680-3](https://doi.org/10.1007/978-3-030-29680-3)
- 2019 **Along-strike segmentation of the Farallon-Phoenix midocean ridge: Insights from the Paleogene tectonic evolution of the Patagonian Andes between 45° and 46° S, *Andean Tectonics, Elsevier***
Gianni, G; Pesce, A; Garcia, H.P.A; Sánchez, M; Soler, S; Navarrete, C; Echaurren, A; Encinas, A; Folguera, A
doi: [10.1016/B978-0-12-816009-1.00023-X](https://doi.org/10.1016/B978-0-12-816009-1.00023-X)
- 2019 **Crustal structure in the southern Andes adjacent foreland and Atlantic passive margin delineated by satellite gravimetric models, *Andean Tectonics, Elsevier***
Gimenez, M; Pesce, A; Pechuan, S; Areco, M. A; Soler, S. R; Correa Otto, S; Lince Klinger, F; Alvarez, O; Folguera, A
doi: [10.1016/B978-0-12-816009-1.00002-2](https://doi.org/10.1016/B978-0-12-816009-1.00002-2)

Conference proceedings and Talks

- 2021 **Fatiando a Terra: Open-source tools for geophysics, *Online talk given to the Geophysical Society of Houston (GSH)***
Uieda, L; Soler, S. R. and Pesce, A
<https://github.com/fatiando/2021-gsh>
- 2021 **Harmonica and Boule: Modern Python tools for geophysical gravimetry, *EGU2021 General Assembly***
Uieda, L; Soler, S. R; Pesce, A; Perozzi, L and Wieczorek, M. A
doi: [10.5194/egusphere-egu21-8291](https://doi.org/10.5194/egusphere-egu21-8291)
- 2020 **Evaluation of the presence of a weak layer in the numerical simulation of lithospheric subduction, *EGU2020 General Assembly***
Agustina Pesce and Victor Sacek
doi: [10.5194/egusphere-egu2020-734](https://doi.org/10.5194/egusphere-egu2020-734)
- 2018 **Análisis Isostático de los Andes Centrales Sur a Partir de la Ondulación del Geoide, *XVII Reunión de Tectónica, La Rioja, Argentina***
Pesce, A. and Gimenez, M.
ISBN: 978-987-42-9619-1
- 2017 **Magnetic characterization of the Loncopué trough, Neuquén,**

	<p>Argentina, XX Congreso Geológico Argentino Pesce, A; Gimenez, M; Folguera, A; Gianni, G; Soler, S. R. ISBN: 978-987-42-6666-8</p>
2017	<p>Caracterización magnética de la fosa de Loncopué, Neuquén, Argentina, I Congreso Binacional de Investigación Científica (Argentina-Chile) y Encuentro de Jovenes Investigadores, San Juan, Argentina Agustina Pesce</p>
2016	<p>Estudio magnético, gravimétrico y magnetotelúrico de la fosa de Loncopué, Primer Simposio de Tectónica Sudamericana, Santiago de Chile, Chile Pesce, A; Gimenez, M; Folguera, A</p>
2015	<p>Análisis geodésico y gravimétrico preliminares la franja de 38º a 40º S de la cordillera de los Andes, XVI Reunión de Tectónica, Río Negro, Argentina Pesce, A; Gimenez, M; Introcaso, A; Guspí, F ISBN: 978-987-3667-17-6</p>
2014	<p>Combinación de alturas del geoide y anomalías de aire libre para gran cantidad de observaciones, XXVII Reunión científica de la Asociación Argentina de Geofísicos y Geodestas, San Juan, Argentina Guspí, F; Pesce, A ISBN: 978-987-33-5605-6</p>
2014	<p>Distensión-compresión en los Andes del norte Argentino. Su explicación a partir de un modelo plástico actualizado, XXVII Reunión científica de la Asociación Argentina de Geofísicos y Geodestas, San Juan, Argentina Pesce, A; Novara, I; Introcaso, A ISBN: 978-987-33-5605-6</p>
2014	<p>Análisis isostático preliminar de la región norte de la Patagonia, a partir de las ondulaciones del geoide, XXVII Reunión científica de la Asociación Argentina de Geofísicos y Geodestas, San Juan, Argentina Pesce, A; Gimenez, M; Guspí, F ISBN: 978-987-33-5605-6</p>

Technical Skills

Programming	Python, Numba, bash, FORTRAN, C
Markup	Markdown, LaTeX, HTML
WebDev	CSS, Bootstrap, Milligram, Normalize
DevOps	GNU/Linux, Unix terminal, VIM, Neovim, VS Code, git, GNU Make, SSH
Graphic Design	Inkscape, GIMP, Krita
Other tools	Libre Office suite, JupyterLab, Jupyter Notebooks, GitHub, Google Cloud Platform
Geophysics tools	Oasis Montaj, GMT, "Fateando a Terra"

Languages

Spanish	Native
English	Intermediate

Communities

Since 2021	Las de Sistema
Since 2021	The Carpentries
Since 2020	Geolatinas
Since 2020	Software Underground

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