

# Agustina Pesce

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## Personal Information

**Full name:** Agustina Pesce

**Pronouns:** She/her

**GitHub:** [aguspesce](#)

**Personal Website:** <https://aguspesce.github.io>

**ORCID:** [0000-0002-5538-8845](#)

## Education

2014 - 2019      **PhD in Geophysics**, [FCEfyN](#), Universidad Nacional de San Juan, Argentina

2005 - 2014      **Licentiate in Physics**, [FCEIA](#), Universidad Nacional de Rosario

## 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*

2019 - March 2022      **Assistant Professor of practice**, Geology Department, [FCEfyN](#), Universidad Nacional de San Juan, Argentina

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      [CONICET](#) Postdoctoral Scholarship

2014 - 2019      [CONICET](#) PhD Scholarship

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

## Web design and Development

<b>Diana Acero</b>	Personal website.
<b>Geolatinas coding group</b>	A website to show what the coding group is and their activities.
<b>Dashboard</b>	A COVID-19 data visualization from Argentina.
<b>Dashboard</b>	Dashboard for Argentina COVID-19 data using <i>plotly</i> and <i>dash</i> .
<b>Garabatos</b>	A site for my paintings.
<b>CromoGráfica</b>	Business website currently under development.

## Teaching

### Undergraduate Courses

2019 - 2022	<b>Assistant professor in Physics I</b> , <i>Departamento de Geología, FCEFyN, Universidad Nacional de San Juan</i>
2019 - 2022	<b>Assistant professor in Physics II</b> , <i>Departamento de Geología, FCEFyN, Universidad Nacional de San Juan</i>

### Workshops and Tutorials

2022	<b>Mandyoc: A finite element code to simulate thermochemical convection in parallel</b> presented at <i>Transform 2022</i> <a href="https://www.youtube.com/watch?v=wzrIF4zpshM&amp;feature=emb_title">https://www.youtube.com/watch?v=wzrIF4zpshM&amp;feature=emb_title</a>
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- 2022 **Introduction to Python** for *CoCo Program*  
<https://github.com/CodeToCommunicate/CoCoLessons>
- 2021 **Introduction to Git and GitHub** for *GeoLatinas*  
<https://github.com/GeoLatinas/intro-to-git-2021>
- 2021 **Tutorial: Processing gravity data with Harmonica** presented at *Transform 2020, Software Underground*  
<https://github.com/fatiando/transform21>
- 2020 **How to manage multi-dimensional arrays?** *Online seminar of the laboratorio de tectonofísica from IAG-USP*  
[https://github.com/aguspesce/online\\_seminar\\_IAG-USP](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**, *Journal of Open-Source Software*, 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**, *Revista de la Asociación Geológica Argentina* 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 gravimetrico 3D de da Corteza Superior de da subcuenca Palauco y alrededores, sur se 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 Wiecek, 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, Argentina**, *XX Congreso Geológico Argentino*  
Pesce, A; Gimenez, M; Folguera, A; Gianni, G; Soler, S. R.  
ISBN: 978-987-42-6666-8
- 2017      **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
- 2016      **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
- 2015      **Análisis geodésico y gravimétrico preliminares la franja de 38° a 40° 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
- 2014      **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

2014 **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

2014 **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

## 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
Geophysics tools	Oasis Montaj, GMT, "Fateando a Terra"

## Languages

Spanish	Native
English	Intermediate

## Communities

Since 2021	<a href="#">Las de Sistema</a>
Since 2021	<a href="#">The Carpentries</a>
Since 2020	<a href="#">Geolatinas</a>
Since 2020	<a href="#">Software Underground</a>

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