Agustina Pesce

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Personal Information

Full name: Agustina Pesce
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GitHub: aguspesce
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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*

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)

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

2019 - March 2022 **Postdoctoral Researcher**, IGSV, *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 **Dashboards**

A COVID-19 data visualization

- Design and development of the libraries
- Automated deployment of the website through GitHub Actions

Since 2019 **MANDYOC**

Open source tool to simulate the mantle dynamics

- 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**

Tools for transforming output files from Mandyoc code to dataset

- Design and development of the library and its API

Since 2016 **Fatiando a Terra**

Open source tools for geophysics

- 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 *plotly* and *dash*.

Garabatos A site for my paintings.

CromoGráfica Business website currently under development.

Teaching

Undergraduate Courses

Since 2019 **Physics I**, *Departamento de Geología, FCEFyN, Universidad Nacional de San Juan*

Since 2019 **Physics II**, *Departamento de Geología, FCEFyN, Universidad Nacional de San Juan*

Workshops and Tutorials

2022 **Mandyoc: A finite element code to simulate thermochemical convection in parallel** presented at *Transform 2022*

https://www.youtube.com/watch?v=wzrIF4zpshM&feature=emb_title

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 tectonofisica from 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

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

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

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

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

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

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

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

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

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

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

2019 **Along-strike segmentation of the Farallon-Phoenix midocean ridge: Insightsfrom the Paleogene tectonic evolution of the Patagonian Andes between 45º and 46º 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

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

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

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

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 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

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	Las de Sistema
Since 2020	Geolatinas
Since 2020	Software Underground

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