Corporate CV

Hodei Uzkeda ***Exploration Geologist***

PhD (High Hons), MSc, BSc

PROFESSIONAL PROFILE

Structural geologist specialized in forward modelling and restoration of geological structures, especially fault-related ones, in compressional and inversion tectonics settings. Additional experience in subsidence analysis, virtual outcrop generation and interpretation, geological mapping and seismic interpretation. He has been involved in several research projects as part of his career as postdoctoral researcher in the Royal Holloway University of London and the University of Oviedo, working in different areas such as the Cantabrian Mountains, the Pyrenees, the Asturian Basin and the Sub-Andean ranges of Argentina and Bolivia.

LANGUAGES

English, Spanish.

EDUCATION

2013 **PhD in Geology**

University of Oviedo (High Hons. Cum Laude)

Dissertation: 3D reconstruction and structural analysis of the Jurassic rocks from Colunga-Tazones (Asturian Basin, NW Iberian Peninsula)

2009 **MSc in Geological Resources and Engineering Geology MSc**

University of Oviedo

Dissertation: A kinematic model for folds acommodanting shortening at the tips of reverse faults: an example from Jaca-Pamplona Basin (Pyrenees)

2007 **BSc in Geology**

University of Oviedo

EMPLOYMENT

2019-today **Terractiva**

Geological consultancy and training for O&G Exploration

terractiva@terractiva.net
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2016-2019	**University of Oviedo** Postdoctoral researcher in a project for the study of the Boomerang Hills (Bolivian Andean to Sub-Andean transition region). Main duties: 2D & 3D seismic interpretation, 3D modelling, validation through kinematic and mechanical restoration. Collaboration in BSc and MSc teaching.
2013-2016	**Royal Holloway University of London** Postdoctoral researcher in the STAR project, working in geomechanical forward modelling, 2D restoration of natural and sandbox examples and development of workflows for restoring and forward modelling.
2008-2012	**University of Oviedo** FPU predoctoral fellow for the elaboration of a PhD project under the supervision of Josep Poblet and Mayte Bulnes (University of Oviedo). Collaboration in BSc teaching.

TECHNICAL INSTRUMENT EXPERTISE

Differential GPS:	Trimble 4600LS, Leica GS16
Drones:	DJI Mavic Pro
Laser rangefinders:	Contour XLSic
Total stations:	Trimble 3603, Topcon GPT-7000, Leica Viva TS11

COMPUTER SOFTWARE EXPERTISE

Adobe suite	Illustrator, Photoshop
CAD	Microstation
Drone handling	DJI Go 4 y Pix4D Capture
Geological Modelling	Geosec, Skua-gOcad, MOVE, Field MOVE, Dynel
GIS	ArcMap, ArcScene, ArcPad
GPS post-processing	Trimble Business Center, Leica Infinity
Microsoft Office suite:	Word, Excel, PowerPoint
Photogrammetry	Stereo Rectification, Visage, VSfM, 3D Stereo VDT, Meshlab, Cloud Compare
Programming	MATLAB, Octave
Seismic Interpretation	The Kingdom Software, Petrel, dug Insight
Structural Geology	FaultKin, Geocalculator, Stereonet

TEACHING EXPERIENCE

Subject: Fieldwork (90 hours)

Degree: 3rd course of Geology Bsc Years: 2010/11, 11/12, 16/17, 17/18

Subject: Geological Mapping (20 h)

Degree: Complements of Geological Engineering Bsc Year: 2010/11

Subject: Global Dynamics and Plate Tectonics (20 h)

Degree: 1st course of Geology Bsc Year: 2010/11

Subject: Structural Geology (81 h)

Degree: 2nd course of Geology Bsc Years: 2011/12, 16/17, 17/18

Subject: Geochemical and Geophysical Prospecting (10 h)

Degree: 5th course of Geology Bsc Year: 2010/11

Subject: Structural techniques for subsurface Geology (14 h)

Degree: Geology MSc Years: 2016/17, 17/18

Subject: Construction and validation of structural interpretations (5 h)

Degree: Geology MSc Years: 2016/17, 17/18

Subject: BSc dissertation supervision Year: 2018/19

Project: 3D interpretation of a virtual outcrop of a structure developed in the Alba Fm. (Carboniferous), La Ballota Beach (Llanes)

Author: David Fernández Martínez Result: 9.1/10

FIELD EXPERIENCE

2019	Photographic campaign of cliffs and inter- and supra-tidal zones along the Asturian coast (NW Iberian Peninsula) using drones.
2016-2018	Field campaign to generate virtual outcrop models using photogrammetry, examples from the Asturian Basin and the Cantabrian Mountains (NW Iberian Peninsula).
2015	Geological mapping for the structural characterization of the Malargüe Block (Mendoza, Argentina).
2011	Photogrammetry campaign to help the geological interpretation of coastal cliffs (Asturian Basin, NW Iberian Peninsula).
2009-2012	Geological mapping of the Asturian Basin, NW Iberian Peninsula.
2008	Field campaign to obtain accurate, distorsion-free geological cross-section through point data taken with GPS + laser rangefinder. Examples from the Southern Pyrenees.

SELECTED PUBLICATIONS

Uzkeda, H.; Poblet, J.; Bulnes, M., 2010: A geometric and kinematic model for double-edge propagating thrusts involving hangingwall and footwall folding. An example from the Jaca-Pamplona Basin (Southern Pyrenees). Geological Journal 45, 506-520.

Martín, S.; **Uzkeda, H.**; Poblet, J.; Bulnes, M.; Rubio, R., 2013: Construction of accurate geological cross-sections along trenches, cliffs and mountain slopes using photogrammetry. Computers & Geosciences 51, 90-100.

Uzkeda, H.; Bulnes, M.; Poblet, J.; García-Ramos, J.C.; Piñuela, 2013: Buttressing and reverse reactivation of a normal fault in the Jurassic rocks of the Asturian Basin, NW Iberian Peninsula. Tectonophysics 599, 117-134.

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Uzkeda, H.; Poblet, J.; Bulnes, M., 2014: Shear angle and amount of extension calculations for normal faults emanating from a detachment: Implications on mechanisms to generate rollovers. Journal of Structural Geology 67, 20-36

Uzkeda, H.; Bulnes, M.; Poblet, J.; García-Ramos, J.C., Piñuela, L., 2016: Jurassic extension and Cenozoic inversion in the Asturian Basin, NW Iberian Peninsula: 3D structural model and kinematic evolution. Journal of Structural Geology 90, 157-176

Martín, S.; Lerma, J.L.; **Uzkeda, H.**, 2017: Heuristic method based on voting for extrinsic orientation through image epipolarization. Journal of Electronic Imaging 26, 063020-1-063020-11

Uzkeda, H.; Poblet, J.; Bulnes, M.; Martín, S., 2018: Effects of inherited structures on inversion tectonics: Examples from the Asturian Basin (NW Iberian Peninsula) interpreted in a Computer Assisted Virtual Environment (CAVE). Geosphere 14, 1635-1656

McClay, K.; Bohórquez, A.M.; Tamara, J.; Hammerstein, J.; Zamora, G.; **Uzkeda, H.**, 2018: Sub-Andean Thick and Thin-Skinned Thrust Systems of Southeastern Peru and Bolivia—A Review. *In*: Zamora, G.; McClay, K.R.; Ramos, V.A. (eds.). Petroleum Basins and Hydrocarbon Potential of the Andes of Peru and Bolivia. AAPG Memoir 117, 35-62.

Bulnes, M.; Poblet, J.; **Uzkeda, H.**; Rodríguez-Álvarez, I., 2019: Mechanical stratigraphy influence on fault-related folds development: insights from the Cantabrian Zone (NW Iberian Peninsula). Journal of Structural Geology 118, 87-103

Martín, S.; **Uzkeda, H.**; Poblet, J.; Bulnes, M., 2019: Geological interpretation of two virtual outcrops of deformed Paleozoic rocks (NW Iberian Peninsula) using 3D stereo VDT in a computer assisted virtual environment (CAVE™). Journal of Iberian Geology XX, XXX-XXX

SELECTED CONFERENCE ABSTRACTS

Uzkeda, H.; Poblet, J.; Bulnes, M., 2008: A kinematic model for folds accommodating shortening in tips of reverse faults: an example form the Southern Pyrenees (N Iberian Peninsula). 1st International Meeting of Young Researchers in Structural Geology and Tectonics (YORSGET 08).

Uzkeda, H.; Poblet, J.; Bulnes, M.; Martín, S.; García-Ramos, J.C., 2011: Buttressing in the hangingwall of a Mesozoic normal fault (Asturian Basin, NW Spain); section constructed via photogrammetric methods). Deformation mechanisms, Rheology and Tectonics (DRT 2011).

Uzkeda, H.; McClay, K., 2014: Sub-Andean thrust systems: section restoration, forward modelling and implications for basement involved thrust systems. AAPG Annual Meeting 2014.

Uzkeda, H.; Poblet, J.; Bulnes, M.; McClay, K., 2014: A new methodology for extensional fault reconstructions, estimations of hangingwall shear angles and amounts of extension - applications to natural examples and analogue models. Geometry and Growth of Normal Faults Meeting.

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