

Mostafa Heydari Parchkoochi

Address: #805, 1053, 10th St., SW, Calgary, AB, Canada, Tel: +1 587 832 1905

e-mail: mocpp@yahoo.com

Work Experience

2006-2015: *Research geophysicist and Software Developer, Geophysics Center, Research Institute of Petroleum Industry (RIPI), Tehran, Iran*

- Oil and gas software development
- Algorithm developing for image processing, digital signal processing (DSP) and machine learning
- Seismic interpretation, depth conversion, inversion, characterization, facies clustering, stratigraphy
- Teaching programming principles and computer coding and technical geophysical subjects

2012-2014: *Geophysics and computer programming consultant, Geophysics Research Group, DANA Geophysics, Tehran, Iran [part time]*

- Matlab and C++ programming and software development
- Algorithm developing for (Vertical Seismic Profiling) VSP processing

2005-2006: *Internship, TOTAL research center (CSTJF), Pau, France*

- Matlab programming
- Amplitude versus Offset (AVO) and seismic quantitative interpretation

Education

2004-2006	Master of Geosciences, Geophysics Major, IFP School (ENSPM), France, GPA= 3.55 /4 (Dual-degree program with P.U.T)
2004-2006	Master of Science, Petroleum Exploration Engineering, Petroleum University of Technology (P.U.T), Tehran, Iran, GPA= 3.45 /4 (Dual-degree program with IFP-School).
2000-2004	Bachelor of Science, Mining Exploration Engineering, Shahrood University of Technology (S.U.T), Shahrood, Iran. GPA=3.21/4.

Projects

Dana Geophysics:

- **Algorithm development , Matlab and C++ Programming:** Data management and Digital Signal Processing (DSP) for VSP Processing Software Design and Development, Technology Park of University of Tehran, Dana Research Center, 2012-2015

Research Institute of Petroleum Industry (RIPI):

- **C# Programming:** Exploration data management solutions, ray tracing, Well-log interpretation and estimation software development
- **Petrel Ocean Programming:** Smart Well Design (2012-2014), Seismic attributes and clustering
- **Seismic Structural Interpretation, Inversion and Reservoir Characterization:** Abadan Plain (2014-15), Lurestan Shale Gas (2014), Persian Gulf (2012-14), Tusan (2011-13), Mansouri (2010-11), Shadegan (2008), Azadegan (2007)

TOTAL research center-Pau:

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- Developing a Matlab application for extraction and analysis of AVO background spatial variations (2005-6)

Shahrood University of Technology:

- Developing Geoelectrical application for exploration for shallow water beds (2004)
- Student-work at the university computer center as network administrator and teacher assistant(2002-4)

Other Programming Experiences

Petrel Ocean: custom seismic attributes, custom data I/O, seismic attribute clustering and well correlation

C#: seismic attributes, seismic processing components, seismic 2D ray-tracing, PCA analysis of seismic attributes, hierarchical classification of seismic attributes, and porosity estimation via numerical modeling of sphere packings

Matlab: seismic facies clustering toolkit ,enhanced seismic 2D to 3D interpolation, automatic Wheeler Diagram extraction from seismic data, OCR and video processing, consistent-dip calculation of seismic images using image processing techniques, auto-picking of seismic images in 2D and 3D domains ,movie representation of 3D seismic volumes by stratal slicing, automatic karstic sinkhole detection in 3D seismic images, manipulating seismic velocity data (converting, gridding, merging, QC, visualizing , etc.), interacting seismic and well data with GoogleEarth, Monte-Carlo simulation of Kuster and Tuksuz model of carbonate porosities for 4D seismic analysis, seismic time to depth conversion, AVO toolkit, Seg-Y toolkit

Panseismic: *Panseismic* is a software I have developed using C# and Matlab-converted C++ with the following functionalities: Seg-Y headers' QC and edit, data visualization and editing, data merging, geometry scanning and editing, extracting and exporting data (text and Excel), dummy data generation, seismic attributes and basic seismic processing. The software is available upon request for non-commercial purposes.

Algorithms Developed

Seismic Auto-picking, Automatic Seismic Image Feature Extraction, Automatic Post-supervised Seismic Facies Classification, Seismic 2D to 3D Interpolation

Professional Skills

Software Development, Seismic Facies Classification, Seismic AVO Analysis, Seismic AVI (Advanced Volume Interpretation), Seismic Inversion and Reservoir Characterization, Seismic Structural Interpretation, Seismic Processing, Well Log and Petrophysical Analysis

Computer Skills

Programming Lang. Professional skills in C++, Visual C#, MATLAB, some knowledge of VB, FORTRAN, SQL, Web design and web-based programming

Software:	Petrel - SLB	SISMAGE - Total
	Epos & Stratimagic- Paradigm	Hampson Russell - CGGVeritas
	Promax- Landmark	Focus - Paradigm
	Geographix Seisvision - Halliburton	Surfer - Golden Soft.
	ArcGIS-ESRI	Photoshop, Illustrator, Indesign – Adobe

Operating Systems: Microsoft Windows, Unix/Linux

References

Available upon request.