**Dr. Douglas Hart** 

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## **Professional Experience**

## Regis University, Anderson College of Business and Computing, Denver, Colorado (2002 – present)

## Senior Director for Curriculum and Professor (2020 - present)

- Assures quality, currency, and relevance of academic programs in the college
- Liaison to Academic Records and Registration, Instructional Design and Technology, and Information Technology Services for the college.

## Professor and Chair of the Data Sciences Department (2015-2020)

- Program Director for the Master of Science in Data Science degree. Responsible for all course content in the curriculum associated with this degree.
- Conceptualized and proposed the MS in Data Science degree program and its curriculum to the university. Shepherded the program proposal through various levels of academic governance, including the board of trustees for the University.
- Managed enrollment growth in the MS in Data Science program that exceeded university estimates.

## Professor and Chair of the Information Technology Department (2011-2015)

- Program Director for the Master of Science in Software Engineering degree. Responsible for all course content in the curriculum associated with this degree.
- Led the change in the graduate software development curriculum to include software application architecture resulting in a measurable increase in student satisfaction.
- Created a Graduate Certificate in Enterprise Java Software Development in 2005.
- Created the Software Engineering Area of Specialization and its associated curriculum in 2004 for the Master of Science in Computer Information Technology program.

#### WesternGeco L.L.C., Denver, Colorado

1984-2002

#### Senior Research Scientist (2001-2002)

• Researched and developed the "Model-based Wavelet Processing" technique, a geophysical signal processing strategy. Developed and documented production software products to support this technology. Presented three invited luncheon talks, along with numerous internal presentations on this technology.

# Senior Research Geophysicist (1992-2001)

- Initiated and provided technical support for an internal project to measure, record, and model the performance characteristics of the computer systems resulting in an understanding of the key performance bottlenecks in the company's computer systems
- Researched and developed pattern recognition algorithms for seismic data, particularly for picking first-arrival events in seismic data. The implemented neural network technique was the first commercially successful attempt to automate first-arrival picking for the company.
- Developed and managed a graduate internship program with the Center for Wave Phenomena at the Colorado School of Mines.

# Research Geophysicist (1989-1992)

• Researched spectral estimation techniques used in deconvolution algorithms. Constructed a nonlinear parameter estimation algorithm for geophysical signal models.

# Education

Colorado School of Mines, Golden, Colorado	1989 — 1992
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Doctor of Philosophy, Major: Mathematics, Minor: Engineering

• Dissertation title: Learning Algorithms for Sequential Decision-Making Problems

Andrews University, Berrien Springs, Michigan 1976 – 1980

## Bachelor of Science, Major: Physics, Minor: Mathematics

• Recipient of a National Science Foundation Grant for undergraduate research participation at the University of Chicago and the Fermi National Accelerator Laboratory in high-energy physics. Worked on the installation of a prototype Cerenkov radiation detector to detect the decay of neutral K-mesons into neutral pi mesons at the Fermi National Accelerator Laboratory.

## **Publications**

Hart, D., 2003, Automated picking of seismic first arrivals with neural networks, in Sandham, B. and Leggett, M., Eds., Geophysical Applications of Artificial Neural Networks and Fuzzy Logic, Kluwer Academic Publishers.

Mateeva, A., Hart, D., and MacKay, S., 2003, Apparent Attenuation from Short-Period Multiples and Instrinsic Absorption in the Seismic Wavelet Model, 65th Mtg.: Eur. Assn. Geosci. Eng., P077.

Mateeva, A., Hart, D., and MacKay, S., 2002, Apparent attenuation from short-period multiples and intrinsic absorption in the seismic wavelet model, 72nd, Internat. Mtg., Soc. Expl. Geophys., Expanded Abstracts.

Hart, D. I., Hootman, B. W. and Jackson, A. R., 2002, Correcting for phase errors in deconvolved seismic data with model-based wavelet processing, 64th Meeting and Technical Exhibition, Technical Programme and Abstracts of Papers, C014.

Hart, D. I., Hootman, B. W. and Jackson, A. R., 2001, Modeling the seismic wavelet using model-based wavelet processing, 71st, Internat. Mtg., Soc. Expl. Geophys., Expanded Abstracts, 1823-1826.

Hart, D. I. and Hootman, B. W., 2000, Achieving consistent and stable phase with mixed-source surveys: CSEG Recorder, 25, No. 7, 3-8.

Hootman, B., and Hart. D., 1998, The realities of processing mixed-source seismic surveys, 68th Internat. Mtg., Soc. Expl. Geophys., Expanded Abstracts, 1436-1439.

Hart, D., 1997, Enhancing wavelet stability with surface-consistent deconvolution, 67th Internat. Mtg., Soc. Expl. Geophys., Expanded Abstracts, 1047-1050.

Hart, D., 1996, Improving the reliability of first-break picking using neural networks, 66th Internat. Mtg., Soc. Expl. Geophys., Expanded Abstracts, 1662-1665.

Hart, D., 1996, Reliably picking first breaks using neural networks, 58th Meeting and Technical Exhibition, Technical Programme and Abstracts of Papers, B033.

Tolwinski, B. and Hart, D., 1992, A Learning Algorithm for a Shortest Path Problem with Application to Mine Planning, ORSA/TIMS San Francisco.

Connelly, D., Hart, D., and Parsons, J., 1989, Analysis of far-field Vibroseis signals, 59th Internat. Mtg., Soc. Expl. Geophys., Expanded Abstracts, 676-679.

Connelly, D., Hart, D., and Parsons, J., 1989, Phase characteristics of impulsive source signals, 51st Meeting and Technical Exhibition, Technical Programme and Abstracts of Papers, 10-11.

Connelly, D., Hart, D., Dragoset, B., Hargreaves, N., and Larner, K., 1987, The 'Model-Based' approach to wavelet processing, in Bernabini, M., Carrion, P., Jacovitti, G., Rocca, F., Treitel, S., and Worthington M., Eds., Deconvolution and Inversion, Blackwell Scientific Publications.

Connelly, D., and Hart, D., 1985, Model-based wavelet processing of deconvolved seismic data, 55th Ann. Internat. Mtg., Soc. Expl. Geophys., Expanded Abstracts, 491-495.

## **Presentations**

"Correcting for phase errors in deconvolved seismic data with model-based wavelet processing." 2002 Florence, Italy. European Association of Geoscientists and Engineers Annual Meeting and Convention.

"Model-based Wavelet Processing." 2002 Denver, Colorado. Eureka Signal Processing Meeting Presentation. Also host and organizer for this internal corporate meeting.

"Achieving consistent and stable phase with mixed-source surveys." 2001 Denver, Colorado. Denver Geophysical Society Luncheon Presentation.

"Achieving consistent and stable phase with mixed-source surveys." 2001 Bakersfield, California. Bakersfield Geophysical Society Luncheon Presentation.

"Modeling the seismic wavelet using model-based wavelet processing." 2001 San Antonio, Texas. Society of Exploration Geophysicists Annual Meeting and Convention.

"Achieving consistent and stable phase with mixed-source surveys." 2000 Calgary, Alberta. Canadian Society of Exploration Geophysicists Annual Meeting and Convention.

"Achieving consistent and stable phase with mixed-source surveys." 2000 Calgary, Alberta. Canadian Geophysical Society Luncheon Presentation.

"Model-based Wavelet Processing." 1998 Houston, Texas, Signal Processing Meeting Presentation. Host and organizer for this internal corporate meeting.

"Surface-consistent Deconvolution." 1998 Houston, Texas, Signal Processing Meeting Presentation.

"Enhancing wavelet stability with surface-consistent deconvolution." 1998 Caracas, Venezuela. Society of Exploration Geophysicist Regional Meeting and Convention.

"Refraction Tomography." 1998 Caracas, Venezuela. Society of Exploration Geophysicist Regional Meeting and Convention.

"Enhancing wavelet stability with surface-consistent deconvolution." 1997 Dallas, Texas. Society of Exploration Geophysicists Annual Meeting and Convention.

"Improving the reliability of first-break picking using neural networks." 1996 Denver, Colorado. Society of Exploration Geophysicists Annual Meeting and Convention.

"Reliably picking first breaks using neural networks." 1996 Amsterdam, The Netherlands. European Association of Geoscientists and Engineers Annual Meeting and Convention.