### Joseph M. Hahn, Ph.D. Data Scientist

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### Qualifications

Skilled data scientist that uses analytics and machine learning (ML) to solve challenging business problems across many verticals (manufacturing, oil/gas, insurance, real estate, etc), with solutions developed using python's data science stack (jupyter, pandas, scikit-learn, tensorflow) and big data tools such as spark as needed. Problem-solver with a PhD in physics and years of prior experience as a research scientist and astro professor, and mentor to those seeking to grow their skills.

#### Goals

To work on challenging and high-impact projects that use data + algorithms (ML and simple neural networks) to: optimize the business, automate biz processes, grow revenue & reduce expenses, and avoid mishaps.

I also moonlight as a research scientist in planetary dynamics at the <u>Space Science Institute</u>, and as a consulting data scientist at <u>JMH DataSciences LLC</u>.

### Education

PhD in physics, 1997, University of Notre Dame BS in physics and BA in astronomy, 1990, University of Texas at Austin

### **Professional Experience**

<u>Oracle:</u>

#### March 2018—present

- Data Scientist, where I grow customer's footprint in the Oracle cloud by delivering proof-ofconcepts (POCs) and provide post-sales support on customer data using python, machine learning (ML), spark, tensorflow, etc, in their cloud tenancies. Use cases include:
  - using ML to optimize steel manufacturing, and to avert manufacturing mishaps
  - using ML to estimate market value of \$20B of residential properties, for tax purposes
  - training ML models to automate insurance claim processing
  - ML to forecast various crimes across a major metro area
  - ML models to detect high-value users of a loyalty card, for targeted marketing purposes
- I also help sales team steal analytics workloads from Oracle competitors (Azure, AWS, GCP).

#### JMH DataSciences LLC:

• Consulting data scientist

#### The Judge Group:

• Temp data scientist for client Charles Schwab, where I developed Spark+ML code on website click histories to identify those users having the greatest lead potential

#### August 2017—Jan 2018

August 2017—present

# 2014—August 2017

• Associate Partner Technical Architect where I delivered analytic solutions in the Amazon AWS cloud, for CSC/DXC's clients in aviation, nuclear power, information management, and fleet management.

### University of Texas Center for Space Research (CSR):

• Research Fellow, where I taught a graduate-level course on planetary dynamics, and wrote textbook on planetary dynamics that is now 80% complete and to be published by Wiley

### <u>Space Science Institute (SSI):</u>

- Full-time Senior Research Scientist until 2014, after which I have continued to moonlight part time, with much of that work supported by my National Science Foundation (NSF) research grant in astrophysics
- research includes modeling of data acquired by the Cassini orbiter at Saturn, the Messenger spacecraft at Mercury, and Hubble observations of circumstellar planet-forming disks
- author or co-author of 31 peer-reviewed scientific publications, available at <a href="http://gemelli.spacescience.org/~hahnjm/pubs.html">http://gemelli.spacescience.org/~hahnjm/pubs.html</a>

## Saint Mary's University in Halifax, NS, Canada:

• Associate Professor of Astronomy and Tier II Canada Research Chair (CRC) in Astrophysics, member of the Institute for Computational Astrophysics (ICA), principle investigator (PI) on grant-supported astrophysics research, taught physics and astrophysics, mentored student research, and organized international astrophysics conference

### Lunar and Planetary Institute (LPI) in Houston, TX

• Research Postdoctoral Fellow, where I pursued astronomy research, PI on NASA research grant, organized astrophysics conferences

# Links

Linkedin: <u>https://www.linkedin.com/in/hahnjoe</u> Github: <u>https://github.com/joehahn</u> Blog posts: <u>https://blogs.oracle.com/authors/joe-hahn</u> Source code for my numerical models: <u>http://gemelli.spacescience.org/~hahnjm/software.html</u> Links to selected chapters from the planetary dynamics <u>textbook</u> I am writing. Recent publications:

• <u>Unusual one-armed density waves in the Cassini Division of Saturn's rings</u>, 2020, French, French, <u>Nicholson, Hedman, Rappaport, Marouf, Longaretti, & Hahn, *Icarus*, **339**, 11360.</u>

### <u>CSC/DXC:</u>

2006—present

2012-2016

2003—2006

1996—2003