

J Justin Donaldson, Ph.D

ML/DS/Engineering Entrepreneur
Above Ventures, LLC

CONTACT INFORMATION

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SKILLS

- Large Language Model Research and Applications
- Machine Learning
- Data Analysis
- Advanced Visualization (Embedding/ML Related)
- Modeling
- Model Optimization
- UI/UX
- Application Engineering
- Docker Containers
- Anomaly Detection
- Customer Service Analysis
- Programming Language Design
- Python, R, + most core web technologies and languages.

EXPERIENCE

Salesforce

Principal Data Scientist/Engineer — Service Cloud

2014-2023

Data Science and Engineering Highlights:

- Wrote the entire Search UI component ecosystem for Salesforce Lightning.
- First senior Search Data scientist.
- Migrated the core search infrastructure to model-trained ranking coefficients from their previous ad hoc system of boosts and filters.
- Developed and patented deep learning models for predicting integration test failures based on code changes.
- Developed and patented deep learning models for predicting error assignments based on code changes.
- Co-founding member of Service Cloud Data science team.
- Produced the initial Docker Container configuration and serving code that is used as the basis for all production AWS Sagemaker deployments.
- Co-founding member of Foundational AI Components team that produced re-usable libraries and components for advanced ML services.
- Member of joint Engineering/Research Leadership Team responsible for investigating and developing related GPT-3 technologies.

Critical Customer Solution Initiatives:

- Wrote a custom job candidate scoring function for CPL, Ireland's largest recruitment firm
- Wrote an advanced candidate profiler for Allegis, The fourth largest recruitment firm in the world.
- Wrote an anomaly detection model for Hulu to detect when an event was affecting customer call volume.
- Worked with Citibank data center team to combine customer financial activity with service interactions in order to drive predictive customer issue resolution.

BigML

Co-founder/President 2011-2013

Leadership and Engineering Highlights

- Developed and patented interactive visualizations used to represent and explore trained models and distributions.
- Managed various administrative tasks as President (Insurance, Expenses, Office management, etc.)
- Led development of website, and integration with internal/external APIs.

EDUCATION

Indiana University - Bloomington, Indiana 2006 - 2011

Ph.D, Informatics - January 2011

- **Dissertation:** “*Visualization of music relational information sources for analysis, navigation, and discovery*”
- **Advising Committee :** Erik A. Stolterman

Indiana University - Bloomington, Indiana

2004 - 2006

M.S., Human Computer Interaction Design

Depauw University - Greencastle, Indiana

1997 - 2001

B.S., Computer Science (Minor in Mathematics)

PUBLICATIONS

DISSERTATION

Donaldson J. . *Visualization of music relational information sources for analysis, navigation, and discovery*. PhD thesis, Indiana University, 2011.

CONFERENCE PRESENTATIONS

Lim Y.-k. , Stolterman E. , Jung H. , and **Donaldson J.** . Interaction gestalt and the design of aesthetic interactions. In *Proceedings of the 2007 Conference on Designing Pleasurable Products and Interfaces*, DPPI '07, page 239–254, New York, NY, USA, 2007. Association for Computing Machinery.

Donaldson J. and Hazlewood W. . Candidate mapping: Finding your place amongst the candidates. In *2008 12th International Conference Information Visualisation*, pages 63–68. IEEE, 2008.

Donaldson J. J. , Conover M. , Markines B. , Roinestad H. , and Menczer F. . Visualizing social links in exploratory search. In *Proceedings of the nineteenth ACM conference on Hypertext and hypermedia*, pages 213–218, 2008.

Lim Y.-k. , Stolterman E. , Jung H. , and **Donaldson J.** . Interaction gestalt and the design of aesthetic interactions. In *Proceedings of the 2007 conference on Designing pleasurable products and interfaces*, pages 239–254, 2007.

Donaldson J. , Knopke I. , and Raphael C. . Chroma palette: chromatic maps of sound as granular synthesis interface. In *Proceedings of the 7th international conference on New interfaces for musical expression*, pages 213–218, 2007.

Baccigalupo C. , Plaza E. , and **Donaldson J.** . Uncovering affinity of artists to multiple genres from social behaviour data. In *ISMIR*, pages 275–280, 2008.

ARTICLES AND WORKSHOPS

Martin F. J. , **Donaldson J.** , Ashenfelter A. , Torrens M. , and Hangartner R. . The big promise of recommender systems. *AI Magazine*, 32(3):19–27, Jun. 2011.

Donaldson J. and Lamere P. . Using visualizations for music discovery. *Tutorial at ISMIR*, 9:99, 2009.

Donaldson J. . Music recommendation mapping and interface based on structural network entropy. In *2007 IEEE 23rd International Conference on Data Engineering Workshop*, pages 811–817. IEEE, 2007.

POSTERS

Donaldson J. . Limestick: designing for performer-audience connection in laptop based computer music. In *CHI '06: CHI '06 extended abstracts on Human factors in computing systems*, pages 712–717, New York, NY, USA, 2006. ACM.

Donaldson J. . A hybrid social-acoustic recommendation system for popular music. In *Proceedings of the 2007 ACM Conference on Recommender Systems*, RecSys '07, page 187–190, New York, NY, USA, 2007. Association for Computing Machinery.

Donaldson J. . Znds: Visualizing structural entropy in queried network sub-graphs. *Netsci '06*, Bloomington, IN, USA, 2006. Association for Computing Machinery.

INVITED STUDENT DESIGN COMPETITIONS

Donaldson J. , Genkina A. , MacArthur S. , Ozakca M. , and Stephano A. . Dove: digital olympic voting environment. In *CHI'04 Extended Abstracts on Human Factors in Computing Systems*, pages 1631–1635, 2004.

Donaldson J. , Evnin J. , and Saxena S. . Echoes: encouraging companionship, home organization, and entertainment in seniors. In *CHI'05 Extended Abstracts on Human Factors in Computing Systems*, pages 2084–2088, 2005.

BOOK CHAPTERS

Lim Y.-k. , **Donaldson J.** , Jung H. , Kunz B. , Royer D. , Ramalingam S. , Thirumaran S. , and Stolterman E. . *Emotional Experience and Interaction Design*, pages 116–129. Springer Berlin Heidelberg, Berlin, Heidelberg, 2008.

Patents

Justin Donaldson. Real-time visualization of user consumption of media items. US8332406B2

J. Justin Donaldson, Adam Ashenfelter, Francisco Martin, Jos Verwoerd, Jose Antonio Ortega, Charles Parker. Visualization and interaction with compact representations of decision trees. US20200379951A1

Francisco J. Martin, Adam Ashenfelter, J. Justin Donaldson, Jos Verwoerd, Jose Antonio Ortega, Charles Parker. Evolving parallel system to automatically improve the performance of multiple concurrent tasks on large datasets. US9558036B1

Francisco J. Martin, Oscar Rovira, Jos Verwoerd, Poul Petersen, Charles Parker, Jose Antonio Ortega, Beatriz Garcia, J. Justin Donaldson, Antonio Blasco, Adam Ashenfelter. Predictive modeling and data analysis in a secure shared system. US20170140302A1

J. Justin Donaldson, Benjamin Busjaeger, Siddharth Rajaram, Berk Coker, Hormoz Tarevern. Machine learning based ranking of test cases for software development. US10474562B2

Justin Donaldson. Personal music recommendation mapping WO2008051882A3

J. Justin Donaldson, Hormoz Tarevern, Sadiya Hameed, Siddharth Srivastava, Feifei Jiang. Error assignment for computer programs. US10409667B2

Zachary Alexander, Scott Thurston Rickard, Jr., Clifford Z. Huang, J. Justin Donaldson. Accounting for positional bias in a document retrieval system using machine learning. US10565265B2

Scott Thurston Rickard, Jr., Clifford Z. Huang, J. Justin Donaldson. Adjusting feature weights for ranking entity based search results. US20180052853A1

ACTIVITIES

University of Washington

2014-

Instructor/Contributor

- Co-Instructor for UW 410 Advanced Machine Learning.
(Slides Available: <https://jdonaldson.github.io/uw-mlearn410/>)
- Member of UW Advisory Board for their school of Professional and Continuing Education

Haxe Foundation Member

2014-

Participant/Contributor

- Developed the Lua target for the Haxe language <https://haxe.org/blog/hello-lua/>
- Sponsored Summer-of-Code for Haxe programmers through mentorship and financial contributions.

UCLA Graduate School Data Science Advisor/Mentor

- Co-hosted a UCLA Data Science competition in collaboration with UCLA's Graduate School
(Slides Available : <https://is.gd/qnji8A>)