

Exponent®
Engineering & Scientific Consulting

Jermaine Marshall, Ph.D.

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Professional Profile

Dr Jermaine Marshall is a Data Scientist based in Exponent's Menlo Park, California office. He specializes in advanced data analytics and possesses graduate level and industry experience in data science and machine learning.

Dr. Marshall's has significant expertise with Python programming and is also proficient with SQL while possessing additional experience with Java and Javascript. Dr. Marshall has worked directly with deploying machine learning models and interface development for those models. Some of his work in machine learning has also been published in peer-reviewed conferences particularly in the area of reliable information recommendations.

Dr. Marshall's graduate-level research focused on developing reliable information systems for consumers to counteract the propensity for social platforms to provide an opportunity for the spread of misinformation. Dr. Marshall also has industry experience in software engineering having completed multiple projects specifically focused on frontend development.

Academic Credentials & Professional Honors

Ph.D., Computer Science and Engineering, University of Notre Dame, 2021

M.S., Computer Science and Engineering, University of Notre Dame, 2019

B.S., Computer Science, University of Arkansas, 2015

National Science Foundation Graduate Research Fellow, 2016-2020

GEM Engineering Fellow 2015-2020

Code2040 Fellow, 2016-2017

Google Scholar, 2016

Xerox Scholar, 2016

Donaghey Scholars, University of Arkansas at Little Rock, 2012

Academic Appointments

Teaching Assistant: Artificial Intelligence Education, Apple Inc, 2019-2020

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Graduate Student Researcher, Department of Computer Science, University of Notre Dame, 2015-2020

Teaching Assistant: Operating Systems, University of Notre Dame, 2017

Teaching Assistant: Ethics in Engineering, University of Notre Dame, 2016

Teaching Assistant: Data Science, University of Notre Dame, 2015

Prior Experience

Data Science Intern, Chegg Inc, 2019

Data Science Research Intern, eBay Inc, 2017-2018

Machine Learning Intern, Intel, 2016

Software Engineering Intern, Adobe Inc, 2015

Information Systems Intern, Tyson Foods Inc, 2014

Professional Affiliations

National Society of Black Engineers (NSBE)

Association for Computing Machinery (ACM)

Institute for Electrical and Electronics Engineers (IEEE)

Publications

Krieg, S. J., Schnur, J. J., Marshall, J. D., Schoenbauer, M. M., & Chawla, N. V. (2020). Pandemic Pulse: Unraveling and Modeling Social Signals during the COVID-19 Pandemic. arXiv preprint arXiv:2006.05983.

Syed, M., Marshall, J., Nigam, A., & Chawla, N. V. (2019, November). Gender Prediction Through Synthetic Resampling of User Profiles Using SeqGANs. In International Conference on Computational Data and Social Networks (pp. 363-370). Springer, Cham.

Marshall, J., Argueta, A., & Wang, D. (2017, October). A neural network approach for truth discovery in social sensing. In 2017 IEEE 14th international conference on mobile Ad Hoc and sensor systems (MASS) (pp. 343-347). IEEE.

Marshall, J., & Wang, D. (2016, September). Mood-sensitive truth discovery for reliable recommendation systems in social sensing. In Proceedings of the 10th ACM Conference on Recommender Systems (pp. 167-174).

Marshall, J., Syed, M., & Wang, D. (2016, May). Hardness-aware truth discovery in social sensing applications. In 2016 International Conference on Distributed Computing in Sensor Systems (DCOSS) (pp. 143-152). IEEE.

Huang, C., Marshall, J., Wang, D., & Dong, M. (2016, May). Towards reliable social sensing in cyber-physical-social systems. In 2016 IEEE International Parallel and Distributed Processing Symposium Workshops (IPDPSW) (pp. 1796-1802). IEEE.

Marshall, J., & Wang, D. (2016, May). Towards emotional-aware truth discovery in social sensing

applications. In 2016 IEEE International Conference on Smart Computing (SMARTCOMP) (pp. 1-8). IEEE.

Wang, D., Marshall, J., & Huang, C. (2016, March). Theme-relevant truth discovery on twitter: An estimation theoretic approach. In Tenth International AAAI Conference on Web and Social Media.

Presentations

A neural network approach for truth discovery in social sensing. In 2017 IEEE 14th international conference on mobile Ad Hoc and sensor systems (MASS), Orlando, FL

Mood-sensitive truth discovery for reliable recommendation systems in social sensing. In Proceedings of the 10th ACM Conference on Recommender Systems (RECSYS), Boston, MA

Towards emotional-aware truth discovery in social sensing applications. In 2016 IEEE International Conference on Smart Computing (SMARTCOMP) St. Louis MO.

Recommending Personalized Healthy Foods Through EM algorithms, In 2019 Tapia Conference, San Diego, CA.

Foodpollo: Driving Reliable Food Recommendations From A Massive Online Food Portal, In 2020 University of Notre Dame Disssertation Defense, Notre Dame, IN

Project Experience

Utilized Natural Language Processing (NLP) to develop convolutional neural network models for predicting job titles based on resume job description. Neural network models produced word and character level embeddings respectively to aid in autocompletion of sample job summaries given a job title. Model deployed using python and flask.

Developed Long Short Term Memory Network (LSTM) prediction model for forecasting numerical demand of live events utilizing social Twitter data and internal data. Engineered features were later allocated to models for ticket sales predictions.

Developed and evaluated a fine-tuned Extreme Gradient Boosting (XGB) model to predict if a user will go from landing page to the initial checkout page. Model later used to increase customer engagement by 2% on user platform.

Developed and evaluated time series and logistic regression models to better understand what factors lead to customer satisfaction with the goal of increasing conversion rates from trial to activation of a subscription service by 3%.

Developed an Android Unit Test Automation Framework for Mobile Application and effectively decreased the amount of time devoted to Unit Testing.

Developed health-related food recommendation models that consider consumer’s eating and lifestyle habits as well as ingredients of recipes the user enjoys to make healthier recommendations. Executed NLP techniques such as word and character level embeddings as input to the models.

Peer Reviews

World Wide Web Conference, Health Track, 2020.

Knowledge and Information Systems (KAIS) Journal (2018)