Marianne Menictas

Education

2017-2018 **Coursework in Computer Science**, *University of New South Wales*.

- Engineering Project Management, Principles of Programming (Python), Database Systems, Data Structures and Algorithms (C), Foundations of Computer Science, Machine Learning and Data Mining.

2012–2015 **PhD in Mathematical Statistics**, *University of Technology Sydney*.

- Thesis: Menictas, M. (2015) *Variational Inference for Heteroscedastic and Longitudinal Regression Models*. Doctor of Philosophy thesis. University of Technology Sydney, Australia.
- Faculty advisor: Prof. Matt Wand.

2008–2011 **B.Sc. in Mathematical Statistics**, *University of Technology Sydney*, First Class Honours.

- Thesis: Menictas, M. (2011) *Eliciting sensitive information by randomized response*. Honours thesis. University of Technology Sydney, Australia.
- Faculty advisors: Prof. Deborah Street and Dr. Narelle Smith.

Employment History

Jan. 2019–present **Postdoctoral Researcher**, *Harvard University*, Cambridge, MA, U.S.A.

- Reinforcement learning and sequential decision making in mobile health.
- Faculty advisor: Prof. Susan Murphy.

Mar. 2018–Dec. 2018 **Postdoctoral Researcher**, *University of Technology Sydney*, Australia.

- Development of fast inference schemes for fitting of Bayesian hierarchical semi-parametric models.
- Faculty advisor: Prof. Matt Wand.

Jan. 2017–Feb. 2018 **Data Scientist**, *Atlassian*, Sydney, Australia.

- Built classifiers to predict whether users will convert to product purchase.
- Contribution to an automated experiment platform within the product growth team to automate the process of AB testing for online experiments. Languages used: R, Python, SQL, Java.
- Comparison between frequentist AB testing methodologies to a Bayesian alternative.

Nov. 2015–Dec. 2016 **Data Scientist**, *Custora*, New York City, U.S.A.

- Contributed to a predictive marketing platform built for e-commerce teams. Data analysis for retailers, e.g., segmentation and revenue prediction, in order to assist retailers in acquiring valuable customers and improve customer retention.
- Replaced computationally inefficient MCMC algorithms with variational Bayesian alternatives. These models were used to predict the conversion rate and revenue of customers that were subject to a given marketing campaign.
- Built pipeline to predict the price sensitivity of customers to personalize marketing campaigns. Estimation and predicitve statistics were created in R and Ruby was used within the ruby on rails framework.

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Jun. 2015–Aug. 2015 **Fellow**, *Insight Data Science*, New York City, U.S.A.

- Built an interactive web-app used to predict the number of job applications made by students who sign up to Campus Job.
- Data were stored in PostgreSQL, cleaned, prepared and visualised using Pandas in Python.
- A multi-class Random classifier in Scikit-Learn was used to predict the number of applications submitted by students.
- An interactive front end was developed using Flask, Bootstrap, jQuery and deployed on AWS.

Feb. 2011–Nov. 2015 **Teaching Assistant**, *University of Technology Sydney*.

- Teaching assistant for *Introduction to statistics* - 1st year undergraduate subject.
- Teaching assistant for *Regression analysis* - 2nd year undergraduate subject.
- Instructor for *Introduction to data analysis with R* - seasonal short course for PhD students.
- Workshop presenter for *Mathemagics* - a workshop for high school students.

Skills Overview

Programming PYTHON, R, RUBY, C, SQL (most flavours, mainly PostgreSQL with PL\pgSQL).

Statistics Bayesian Statistics and Statistical Machine Learning.

Other Strong focus on model development and model validation cycle, ability to conduct research in novel areas, refined communication and presentation skills, detail oriented and results driven.

Awards

2015 **Insight data science scholarship**, funded by Insight Data Science

2014 **Excellence in postgraduate research**, awarded by the Statistical Society of Australia

2014 **EJG Pitman prize award for outstanding presentation**, awarded by the statistical Society of Australia

2014 **Higher degree research student conference fund**, funded by the University of Technology Sydney

2014 **Australian postgraduate award**, funded by the Australian Federal Government

2014 **Deans merit award for academic excellence**, awarded by the University of Technology Sydney

Publications

- Menictas, M., Di Credico, G. and Wand, M.P. (2020) Streamlined Variational Inference for Linear Mixed Models with Crossed Random Effects. *Unpublished manuscript*.
- Menictas, M., Tomkins, S. and Murphy, S.A. (2020) Streamlined Empirical Bayes Fitting of Linear Mixed Models in Mobile Health. *Unpublished manuscript*.
- Nolan, T.H., Menictas, M. and Wand, M.P. (2020) Streamlined Computing for Variational Inference with Higher Level Random Effects. *Journal of Machine Learning Research*, *21(157):1*

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- Carpenter, S.M., Menictas, M., Nahum-Shani, I., Wetter, D.W., and Murphy, S.A. (2020) Developments in Mobile Health Just-in-Time Adaptive Interventions for Addiction Science. *mHealth in Addictions section for Current Addiction Reports*.
- Menictas, M., Rabbi, M., Klasnja, P. and Murphy, S., (2019). Artificial intelligence decision-making in mobile health. *The Biochemist, 41(5), pp.20-24*.
- Menictas, M. Nolan, T.H., Simpson, D.G. and Wand, M.P. (2019) Streamlined Variational Inference for Higher Level Group-Specific Curve Models. *Statistical Modelling*, *Year and page numbers pending*.
- Menictas, M. and Wand, M.P. (2015). Variational inference for heteroscedastic nonparametric regression. *Australian and New Zealand Journal of Statistics, 57, 119-138.*
- Menictas, M. and Wand, M.P. (2013). Variational inference for marginal longitudinal semiparametric regression. *Stat*, 2, 61-71.
- Menictas, M. Variational Inference for Heteroscedastic and Longitudinal Regression Models. PhD Thesis.
- Groen, L., Joseph, A., Black, E., Menictas, M., Tam, W. and Gabor, M. (2010). Optimal location of tsunami warning buoys and sea level monitoring stations in the mediterranean sea. *International Journal of Tsunami Society*, 29 2, 78-95.

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