Brian de Silva

Contact Information

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Research Interests

Scientific computing, numerical analysis, machine learning, and reduced order modeling

Education

University of Washington

Ph.D. candidate, Applied Mathematics (expected spring 2020)

- Advisor: J. Nathan Kutz
- GPA: 3.9
- Advanced Data Science Option

M.S. in Applied Mathematics, December 2015

University of California at Los Angeles

B.S. in Applied Mathematics, December 2013

- Specialization in computing

Publications

- B. de Silva, R. Compton *Prediction of Foreign Box Office Revenues Based on Wikipedia Page Activity,* arXiv preprint - arXiv:1405.5924

  Curated a dataset of meta data associated with films' Wikipedia pages and attempted to predict box office revenues using linear models such as linear regression, ridge regression, and LASSO. We found that such models performed reasonably well for the domestic box office, but not foreign ones.

- Maria-Grazia Ascenzi, Xia Du, James I. Harding, Emily N. Beylerian, Brian M. de Silva, Ben J. Gross, Hannah K. Kastein, Weiguang Wang, Karen M. Lyons, Hayden Schaeffer, *Automated Cell Detection and Morphometry on Growth Plate Images of Mouse Bone,* Applied Mathematics, Special issue on Mathematical modeling and experimentation, Vol.5, No.18, 2014.

Teaching Experience

Autumn	2018	Instructor, *Introduction to Differential Equations and Applications*
Summer	2017	Instructor, *Introduction to Differential Equations and Applications*
Spring	2017	TA, *Graduate Numerical Anaylsis of Time Dependent Problems*
Winter	2017	Instructor, *Numerical Linear Algebra and Numerical Analysis*
Autumn	2016	TA, *Graduate Vector Calculus and Complex Variables*
Summer	2016	Instructor, *Numerical Linear Algebra and Numerical Analysis*
Spring	2016	TA, *Calculus III*
Winter	2016	TA, *Calculus II*
Autumn	2015	TA, *Beginning Scientific Computing*
Spring	2015	TA, *Beginning Scientific Computing*
Winter	2015	TA, *Calculus I*
Autumn	2014	TA, *Calculus* I

Graduate Coursework

- ❑ Approximation Theory & Spectral Methods
- ❑ Dynamical Systems
- ❑ Machine Learning
- ❑ Numerical Analysis
- ❑ Differential Equations
- ❑ Numerical Solution of Differential Equations
- ❑ Data Analysis
- ❑ Statistics
- ❑ Numerical Linear Algebra
- ❑ Numerical Optimization
- ❑ Functional Analysis
- ❑ Finite Volume Methods

Honors and Awards

2017 Boeing Award for Excellence in Service

2015 Joseph Hammack Endowment Award for Outstanding Work in Applied Mathematics

Scientific Research Experience

Summer 2018 Software Engineer Internship
Machine learning
Sparse Neural Nets, Embeddings
Facebook, Seattle, WA

2013–2014 Information and Systems Sciences Internship
Social and Information Networks
Social modeling, Data collection
HRL Laboratories, Malibu, CA

Summer 2013 Applied Mathematics REU
Social Networks and Large Data Sets
Topic Modeling, Nonnegative Matrix Factorization
UCLA, Los Angeles, CA

Programming languages

C++	Four years, used for numerical methods and scientific computing
MATLAB	Six years, used for numerical methods and scientific computing
Python	Three years, used for machine learning and numerical methods
Mathematica	Two years, used for symbolic calculations and visualization
SQL	Three months, used for machine learning

Extra–curriculars

2017–Present	Member of Applied Math Diversity Committee
2015–2018	Principal organizer for the Numerical Analysis Research Club
2017–2018	Member of Applied Math Teaching Club
2016–2017	Graduate Student Representative of Applied Math Department
2015–2016	Vice President of the UW SIAM student chapter