ADDRESS
5250 University Dr.
Coral Gables, FL

DANIEL P. MCGIBNEY
Curriculum Vitae

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ACADEMIC EXPERIENCE

Assistant Professor of Professional Practice   8/2016-present
Co-director of the MSBA Program
University of Miami, Coral Gables, FL.

Visiting Assistant Professor   1/2014-7/2016
College of William and Mary, Williamsburg, VA.

EDUCATION

Ph.D. Systems Science and Mathematics, Washington University in St. Louis, St. Louis, MO   Summer 2014
M.S. Electrical Engineering, Washington University in St. Louis, St. Louis, MO   Fall 2006
M.S. Mathematics, Southern Illinois University Edwardsville, Edwardsville, IL   Fall 2006
M.S. Systems Science and Mathematics, Washington University in St. Louis, St. Louis, MO   Spring 2006
B.S. Electrical Engineering, Southern Illinois University Edwardsville, Edwardsville, IL   Spring 2001

INSTRUCTIONAL EXPERIENCE (*recent*)

University of Miami (Coral Gables, FL)
- Data Mining   Spring 2017
- Big Data Analytics   Spring 2017
- Statistical Methods and Quality Control   Spring 2017, Fall 2017
- Applied Probability and Statistics   Fall 2016
- Management Science Models for Decision Making   Fall 2016
- Applied Regression Analysis and Forecasting   Fall 2017
- Statistics for Managerial Decision Making   Fall 2017

College of William and Mary (**Williamsburg, VA**)
- Data Analysis   Spring 2015, Spring 2016
- Applications of Machine Learning   Spring 2016
- Elementary Probability and Statistics   Spring 2015-Fall 2015
- Probability/Mathematical Statistics I   Fall 2015
- Applied Statistical Learning   Summer 2015

Student Evaluations
- "Dr. McGibney has been one of the best professors I've had at William and Mary. He is very personable and the class actually often feels like the students are having an informal academic discussion, with a clear direction for topics, good time utilization, and a graduate level atmosphere."
- "Professor McGibney is the best math professor I've ever had so far. He is always prepared for class, and very helpful whenever you have questions. He greatly stimulates my interest in data analysis and math in general."
- "Professor McGibney made the class seem easy! Not because he was lax, but because he effectively taught and used handouts and homework to give us efficient practice. I've never been in any other math class that was taught this well! He made me believe that I am capable of continuing on in math."

RESEARCH INTERESTS

- Machine Learning with an emphasis on Deep Learning
- Optimal Control and Optimization
- Big Data Analytics and Applications
- Image Processing

HIGHLIGHTS

- Revitalized the MSBA program, offering solutions for curriculum, advising, and recruiting needs and participated on a team of faculty administrators to address accreditation and admissions.
- Co-directed the MSBA program and collaborated with a faculty team in a dynamic environment to support, promote and manage the program, providing leadership as needed.
- Advised, mentored, and served as liaison to university partners on several graduate student capstone projects.
- Developed and implemented the curriculum for courses including Data Analysis (spring 2015 and spring 2016), Applied Statistical Learning (summer 2015) and Big Data Analytics (spring 2017 and spring 2018).
- Taught a variety of courses at the undergraduate and graduate level including classes on data mining, machine learning, statistics, big data analytics.
- Served as faculty mentor to four research teams comprising of 9 students on image classification projects including the National Data Science Bowl (NDSB) Plankton Challenge, National Data Science Bowl (NDSB) Heart Disease Prediction, Ultrasound Nerve Segmentation and Diabetic Retinopathy Classification during the summers of 2015 and 2016.
- Designed and implemented state-of-the-art methods in machine learning and applied mathematics including Convolutional Neural Networks, Pseudospectral Methods for Optimal Control, Kalman and Particle Filtering, etc.

HONORS AND AWARDS

Excellence in Teaching Award (selected by the MSBA class of 2017)   5/2017
University of Miami, Coral Gables, FL

NVIDIA Academic Hardware Grant   8/2015
The College of William & Mary, Williamsburg, VA.

National Science Foundation (Summer Research Grant)   6/2015-8/2015, 6/2016-8/2016
The College of William & Mary, Williamsburg, VA.

Restaurant Revenue Prediction (kaggle.com), Placed in the top 10 percent   4/2015
The College of William & Mary, Williamsburg, VA.

McDonnell Academy Global Energy and Environmental Partnership Fellow   1/2012-11/2012
Washington University, St. Louis, MO.

           7/2010-5/2011, 8/2004-8/2005
Science, Technology, Engineering and Math (STEM) Graduate K-12 Fellow
Washington University, St. Louis, MO.   8/2005-5/2006

MIT/Lincoln Labs Graduate Fellowship
Washington University, St. Louis, MO.   1/2003-8/2004

Graduate Assistantship
Southern Illinois University Edwardsville, Edwardsville, IL.

THESES

Ph.D. Dissertation
D. McGibney. Adviser: H. Mukai. "Resource Distribution for Robots and Nexus between Water and Energy." Department of Electrical and Systems Engineering, Washington University in St. Louis. St. Louis, MO. December 2013.

Master's Thesis
D. McGibney. Advisers: H. Mukai, U. Ledzewicz. "Hybrids of the Kalman and Particle Filters." Department of Mathematics and Statistics, Southern Illinois University Edwardsville. Edwardsville, IL. August 2006.

PUBLICATIONS

Published Papers
M. Ito, D. McGibney, K. Sekiyama, H. Mukai, and T. Fukuda, "A Multiple Robot Cognitive Sharing System using Audio and Video Sensors." Micro-NanoMechatronics and Human Science (MHS), Conference Proceedings, pp. 10-13. Nov. 2013. Nagoya, Japan.

D. McGibney, R. Morioka, K. Sekiyama, H. Mukai, and T. Fukuda, "A Multi-robot Cognitive Sharing System using Audio and Video Sensors." Distributed Autonomous Research Systems (DARS), pp. 397-408. Nov. 2012. Baltimore, MD.

D. McGibney, T. Umeda, K. Sekiyama, H. Mukai, and T. Fukuda, "Cooperative Distributed Object Classification for Multiple Robots with Audio Features." Micro-NanoMechatronics and Human Science (MHS), 2011 International Symposium, pp. 134-139. Nov. 2011. Nagoya, Japan.

Working Papers
D. Lehmann, D. McGibney, Y. Guan, "Wound Heal Time Prediction and Analysis," *in progress 2018*.

INDUSTRY EXPERIENCE

Operations Research Analyst   4/2007-4/2010
Northrop Grumman IT, Scott AFB, IL.
- Functioned as team lead for an ongoing project to approximate the estimated delivery date of requisitions to military locations outside of the U.S.
- Led team in developing a multiple regression model from historical data that produced accurate estimates of the delivery date.
- Operated as technical lead on two projects to model the supply chain distribution channels of the U.S. Pacific Command and the U.S. European Command.
- Created simulation models of current transportation systems using the Supply Chain Guru software package.
- Analyzed possible courses of action for transportation systems and made recommendations.
- Extracted, filtered, cleansed, and interpreted data on a large scale using multiple United States Transportation Command (USTRANSCOM) databases and other databases including GTN, SDDB, GATES, GEMS, SMS, etc.
- Led team discussions on the current transportation airlift infrastructure in support of Operation Iraqi Freedom and the Central Combatant Command.

MIS Generalist   2/2003-1/2004
People's Health Centers, Inc., St. Louis, MO.
- Generated Visual Basic programs to filter data reports and summarized numerical data to provide usable information.
- Analyzed statistical information to estimate health care provider demand, departmental demand, and frequency of illness.
- Minimized client downtime for a 200+ customer base distributed over three St. Louis based sites by providing technical support for software Help Desk, taking customer calls, and resolving outstanding issues.

Instrument and Control Engineer   11/2001-10/2002
Nooter/Eriksen, Inc., Fenton, MO.
- Designed control and flow operations for Heat Recovery Steam Generator (HRSG).
- Prototyped the instrumentation and valves using knowledge of mathematics and system dynamics of a HRSG.
- Provided quotes for potential customers by creating detailed schematics with an exhaustive list of valves and instrumentation needed for the operation of a HRSG.
- Streamlined quoting process to improve the efficiency and accuracy in providing detailed information to purchasers.

CONSULTING

Vohra Wound Physicians   10/2017 - present
- Made initial and dynamic predictions on wound heal times to provide better care to patients.
- Met regularly with subject matter experts and medical doctors for guidance and support in an ongoing effort to develop prediction tools that will assist physicians in assessment and treatment.

PRESENTATIONS

Invited Talks

- D. McGibney, R. Morioka, K. Sekiyama, H. Mukai, and T. Fukuda, "A Multi-robot Cognitive Sharing System using Audio and Video Sensors." Distributed Autonomous Research Systems (DARS). Nov. 2012. Baltimore, MD.
- D. McGibney, T. Umeda, K. Sekiyama, H. Mukai, and T. Fukuda, "Cooperative Distributed Object Classification for Multiple Robots with Audio Features." Micro-NanoMechatronics and Human Science (MHS), 2011 International Symposium. Nov. 2011. Nagoya, Japan.
- D. McGibney, I. Dasanayake, H. Mukai, J. Li, "Nexus between Water and Electrical Power Systems" at 4th Symposium on Emerging Topics in Control and Modeling: Networked System. Oct. 2012. Urbana, Illinois.
- D. McGibney, I. Dasanayake, H. Mukai, J. Li, "Nexus between Water and Electrical Power Systems" at 4th International Symposium on Energy & Environment: Abundant Clean Cost-effective Energy Systems for Sustainability (ACCESS). Dec. 2012. Mumbai, India.
- D. McGibney, I. Dasanayake, H. Mukai, J. Li, "Nexus between Water and Electrical Power Systems" at the College of William & Mary. Sept. 2016. Williamsburg, VA.

STUDENT AND CAPSTONE MENTORSHIP

College of William and Mary (Williamsburg, VA)

- *Saving Babies from Sepsis with Heartbeat Data*
  Used classification methods (support vector machines and logistic regression) to predict sepsis events. (3 students)
- *National Data Science Bowl: Plankton Classification*
  Assessed ocean health by classifying species of plankton using deep learning strategies and techniques. (2 students)
- *Diabetic Retinopathy Detection*
  Classified stages of diabetic retinopathy based on images of retinas using feature engineering. (2 students)

College of William and Mary (Williamsburg, VA)

- *Vitas Healthcare Capstone*
  Predicted length of stay of hospice care given customer characteristics. (5 students)
- *Florida Panthers Capstone*
  Developed a Shiny app that analyzed ticket purchasers by location. (3 students)
- *MMM Healthcare Capstone*
  Optimized schedule of healthcare workers and assessed profitability of clinics. (3 students)
- *Datlytics Capstone*
  Predicted rental car demand using time series models for a small consulting firm. (4 students)
- *BankUnited Capstone*
  Analyzed bank branch data to identify the profitability of branch performance. (3 students)
- *UM Health System Capstone*
  Analyzed University of Miami healthcare data in an effort to identify opportunities for improvement. (3 students)

PROFESSIONAL MEMBERSHIPS

- Institute of Electrical and Electronics Engineers (IEEE)
- Society for Industrial and Applied Mathematics (SIAM)
- Institute for Operations Research and the Management Sciences (INFORMS)
- Phi Eta Sigma (National Honor Society)

SOFTWARE

- **Operating Systems:** Windows, Mac OS X, Ubuntu Linux and other Linux.
- **Programming Languages:** Matlab, R, SparkR, Python, C, C++, C#, SAS, Assembly Language, Java, VHDL, HTML, Visual Basic, and Visual Basic Macros.
- **Simulation Programming:** Matlab, R, Python, Arena, VHDL, Supply Chain Guru, and SIMAN.
- **Instructional Software:** BlackBoard, Desire-to-Learn, MathXL, and MyMathLab.