Kenneth R. Bundy

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LinkedIn
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Portfolio

Data Scientist Profile

Exceptional research consultant equipped with a Master's Degree in Applied Mathematics and 5+ years of cutting-edge experience in statistical analysis and machine learning, including NASA and NSF funded neural network development. Tertiary-level statistics educator and Evidence-based Teaching Fellow. Strategic thinker leveraging curiosity and work ethic to consistently exceeding expectations and earn recognition for communication and machine learning expertise.

HIGHLIGHTS OF EXPERTISE

Statistics and Data Analysis:
- Data Visualization
- Hypothesis Testing
- Regressions Models
- Time Series Forecasting

Machine Learning:
- Convolutional Neural Networks
- Recurrent Neural Networks
- Reinforcement Learning
- GBM, SVM, KNN, k-means…

Cloud, Big Data, and Programming:
- Amazon Web Services (AWS)
- Spark, SparkSQL, SparkML
- Python, R, SQL, Java, MATLAB
- HTML5/CSS3, Bootstrap 4

Experience Highlights

RESEARCH CONSULTANT IN MACHINE LEARNING (10/2018 to Present)
Wireless Sensor Networks Laboratory, University of Maine, Orono, ME

Creating machine learning and deep learning algorithms to control wireless sensor networks and optimize system performance. Writing papers and presentations for publication.

Key Achievements:
- Developed single and multi-agent reinforcement learning algorithms to optimally control information flow in wireless sensor networks
- Modeled the amount of incident radiation on solar panels and predicted signal loss in a wireless communication channel using time series analysis and deep learning (Long Short-Term Memory/LSTM)
- Developed laboratory demonstration based on Google DeepMind's AlphaGo Zero, allowing students to play Connect-4 against state-of-the-art AI.

LECTURER IN MATHEMATICS & STATISTICS (9/2019 to 8/2020)
College of Professional Studies, University of Maine at Augusta, Augusta, ME

Taught statistics and algebra courses totaling 14 credits per semester to undergraduate students

Key Achievements:
- Re-designed course using open-source textbooks and software, saving students an estimated $18,000 per semester.
- Topics covered included data visualization, descriptive statistics, hypothesis testing (z, Student's t, Chi-squared, ANOVA), and linear regression.
- Provided remote instruction to students, both synchronously and asynchronously, through Zoom, videos, learning management systems, and interactive television instruction

ADJUNCT INSTRUCTOR / CURRICULUM DEVELOPER / TEACHING ASSISTANT (9/2015 to 5/2019)
Department of Mathematics, University of Maine, Orono, ME

Taught Introduction to Calculus and Calculus II recitations, developed course materials, and collaborated with other faculty to foster student success.

Key Achievements:
- Taught a course on calculus in an active-learning classroom using evidence-based teaching practices, including group-work, student-centered pedagogy and utilizing student response systems and oversaw five calculus II recitations
- Trained graduate and undergraduate teaching assistants
- Collaborated with other faculty to create a workbook for Calculus I

RESEARCH ASSISTANT (8/2014 to 8/2015)

continued...

Wireless Sensor Networks Laboratory, University of Maine, Orono, ME

Researched air leaks in pressurized spacecraft using an interdisciplinary approach as part of a NASA SEED grant.

Key Achievements:

- Created a machine learning model to identify air leaks in space modules with 90% accuracy
- Designed lab demonstration materials, including real-time 3D data visualizations from the laboratory's SQL server
- Mentored four high school students through the NASA MERITS program
- Awarded "Best Oral Presentation in Engineering" at the University of Maine Student Symposium

SUPPORT TECHNICIAN (12/2013 to 7/2014)
Nexxlinx, Inc., Orono, ME

Handled technical support to restaurants for OpenTable reservation service and customer concerns.

Key Achievements:

- Applied knowledge of hardware, software, and networks to troubleshoot electronic reservations systems, solving Internet and firewall issues with SQL-based software

*Additional experience as **Night Manager**, Poland Spring Inn, Poland, ME. In charge of all the night operations at this resort complex comprising three hotels, two restaurants, and a golf course. Duties included training new employees, serving customers, dealing with maintenance requests, handling money and reservations, and intervening in emergencies.*

Education & Credentials

MASTER'S DEGREE IN APPLIED MATHEMATICS
University of Maine, 2018, Orono, ME

BACHELOR'S DEGREE IN MATHEMATICS: CONCENTRATION IN STATISTICS
University of Maine, 2014, Orono, ME

SQL FOR DATA SCIENCE (Includes Spark & SparkSQL)
University of California, Davis / Coursera, Expected Oct. 2020

EVIDENCE-BASED TEACHING FELLOW: BEST PRACTICES FOR HIGHER EDUCATION
University of Maine, 2019, Orono, ME

AWS FUNDAMENTALS: BUILDING SERVERLESS APPLICATIONS
Coursera/Amazon Web Services, 2019

Skills & Proficiencies

Software & Applications:	PyTorch, TensorFlow, Pandas, Numpy, Scikit-learn, Matplotlib, Seaborn, Plotly, RStudio, Shiny, Microsoft Office, CUDA, Git, Spark/Pyspark, Tableau
Programming Languages:	Python, R, SQL/MySQL, MATLAB, C/C++, Qt, Java, HTML/CSS, LISP, LaTeX
Statistical Methods:	Regression Modeling, Forecasting, Hypothesis Testing, Dimensionality Reduction, Parameter Estimation, k-Means Clustering, ARMA/(S)ARIMA/TBATS
Favorite Algorithms:	Deep Learning (CNN, RNN/LSTM/GRU), Reinforcement Learning, Gradient Boosted Trees, Support Vector Machines (SVM), k-Nearest Neighbor (KNN/KNR)

Publications

K.R. Bundy, A. Abedi, "*Air Leak Material Identification in Pressurized Space Vehicles using a Convolutional Neural Network*", IEEE WiSEE Conference, 2017

K.R. Bundy, C.M. Pandian, V. Cacesse, A. Abedi, "*Analysis of Leak Spectral Signatures in Pressurized Space Modules*", IEEE WiSEE 2016

K.R. Bundy, A. Abedi, "*Collection and Analysis of Leak Spectral Signatures with Application to the ISS*", IEEE WiSEE 2015