Robert Sunderland

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SUMMARY

- Database and SQL – 15 years
- Python Programming and automation – 5 years
- Machine Learning and Neural Networks – 3 years
- Business Intelligence – 10 years
- Data Engineering – 6 years
- Agile/JIRA/Kanban – 3 years
- Natural language processing
- Version Control: GitHub, SVN

DATA PROJECTS

1. Spanish education – scrape verb conjugation and news articles from the web and analyze – github - 2021
2. Polynomial regression/correlation of volumes vs CPU consumption in performance tests - 2021
3. Pairwise correlation matrix for 3500 features in performance test data with parallel processing - 2021
4. Python API module for access to REST and delimited flat filedata in multi-user Jupyter server - 2020
5. ARIMA time series forecasting - replacing legacy OLS regression in manually populated Excel files 7% accuracy improvement and 8 hours saved per month - 2019
6. Cosine similarity of server configuration strings to map NPU ratings to servers – 20% increase in mapping accuracy - 2019
7. Parse tabular/text data and attachments from email inbox and place in data store for forecasting and correlation - 2018
8. Outlier detection in time series data for server utilization to improve forecast accuracy – replacing manual process - 2016
9. Batch regression and forecasting for 70000 servers against limit thresholds for proactive alerting (85 hour/month time saved for team) - 2017
10. Data cleaning and bulk join from multiple data sources for time series forecasting of multiple application components - 2017
11. Interactive, Web-based dashboard, visualizations, and forecasting of disk usage data with exception reporting emails - 2005

AWARDS/LEADERSHIP

- Founder/lead for python in-house user group at Bank of America with 1100 members
- Bank of America Gold Award – data analytics and Python User Group leadership – 2019/2020
- Promoted to Automation sub-team of capacity planning group
- Bank of America Gold Award – resolving operational risk
- Bank of America Silver Award – teamwork during datacenter failover planning
- Bank of America Bronze Award – Agile Transformation Adoption
- Lead for multi-national capacity tools team at IBM bringing in BI vendor products for demo and evaluation

EXPERIENCE

Bank of America, VP - System Engineer – Capacity Engineering Analysis and Automation
Aug 2016 – present

Design and maintenance of tools and automation supporting Capacity Management team. Database and tools support, feature development, and implementation of analytics logic.

- Set up Jupyter analytics environment for in-house Performance Testing data aggregation toolset
- Created a Python API for access to web and file data
- Saved 10 hours per month with custom python automation solution for shared server capacity management
- Creation of Agile stories for business and technical requirements, and manage resolution across Kanban dashboard
- Integration of CI/CD and DevOps best-practices using Horizon, Confluence, and BitBucket (GitHub)
- Increase transparency to data through creation of net new executive dashboard for capacity using SSRS and Python
- Design Implementation and maintenance of DB tables tracking server configuration metrics

Bank of America, VP - System Engineer –Midrange Capacity Planning
Oct 2010 - Aug 2016

Senior capacity planning activities including process design and training. Advise junior team members regarding business and technical capacity deliverables, while continuing support of capacity plans for various applications.

- Create models and visualizations to demonstrate improvements and cost reductions with server migrations
- Maintain time series forecasts for 90 applications on Linux and Windows
- Correlation analysis for utilization metrics and business data to optimize performance and minimize infrastructure cost
- Design and maintenance of SQL Server database tables supporting capacity analytics, visualizations, and reporting
- Improved service maturity through migration of analytics from excel files to database and SAS

- Successfully implemented Python client for Splunk REST API to retrieve server volume data

Bank of America, AVP- Technology Operations – Midrange Capacity Planning
Oct 2007- Oct 2010

Develop and maintain capacity plans to determine forecasted resource requirements for Windows and UNIX based applications. Created executive reports and dashboards for presentation to line of business leads.

- Parsing logged process data from servers to group processes by function and visualize utilization using SAS
- Design and implement workload forecast models using BMC Perform and Predict
- Reduced team workload by 20 hours per week by implementing a VBA solution to read and process KPI from emails
- Assess projects by interfacing with developers and leadership teams to determine potential capacity implications, model impacts for various hardware solutions and recommend optimal configurations to meet performance SLAs
- Analyze performance test results performing correlation analyses of KPI metrics and system usage to determine optimal configurations and performance limits
- Eliminated off-shift manual reporting and man-hours for deployment performance using scheduled SSRS reports
- Identify low utilization server environments and make recommendations to consolidate hardware footprint to drive cost reductions

IBM, Advisory Technical Services Professional – Performance and Capacity Analyst
Jul 2001 - Oct 2007

Support for capacity planning for internal applications and Global Services external clients. Evaluate vendor tools and develop automation to support capacity planning processes.

- Improved disk usage tracking from web table to automated web-based dashboard and reporting solution using Apache, Perl CGI and DB2
- Open trouble tickets for resources forecasted to exceed resource thresholds, develop plan to remediate capacity shortfalls, communicate with architects and applications stakeholders to implement capacity
- Managed end-to-end requirements, design, coding, and implementation of multiuser issue tracking system with Perl, JavaScript, and AJAX
- DB2 database design and administration including user permissions, table maintenance, and issue remediation

SKILLS

Machine learning • ARIMA regression • SVM/SVR • Decision Tree • Logistic regression • Clustering • Random Forest • ANOVA	**Languages** • Python • SQL • R • Javascript • Perl • Java • Shell scripting • Markdown	**Data** • Kafka • Hadoop • Teradata • MS SQL • Oracle • DB2 • Splunk	**Standards** • FDA • ITIL • Agile • Six Sigma • Remedy • Financial compliance
Business Intelligence • SAS BI • Tableau • Alteryx	**Natural Language** • Cosine similarity • Sentiment analysis • Regular Expressions	**Visualization** • Matplotlib • Bokeh • Tkinter • Django • CGI	**Neural Networks** • Tensorflow • Keras • pyTorch

EDUCATION

Kutztown University, Kutztown, PA

- Bachelor of Science computer science and mathematics

Presentations/Talks

- Introduction to Python
- How to use regular expressions
- Code refactoring tutorial – moving from Jupyter to res-usable packages
- Intro to GitHub/Bitbucket

- Unit testing in Python
- Creating python packages and sharing via Inner Source
- Tkinter basics – creating a GUI for your python app
- Using Bank of America shared Jupyter platform
- PyCharm remote kernel debugging step by step
- SAS for automation of time series regression of server usage