Jacob Barkovitch

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EDUCATION

Binghamton University, State University of New York, Thomas J. Watson College of Engineering and Applied Science
Bachelor of Science in Computer Science December 2022
Dean's Honors List: Fall 2019 – Spring 2021, Spring 2022 – Fall 2022
Relevant Coursework: Social Media Data Sci Pipeline, Advanced Object-Oriented Design, High Performance Computing
Conferences/Publications: ICIAP 2022, NeurIPS 2021, KGML 2021, APS Physics March Meeting 2021, Research Days 2019-2020

TECHNICAL SKILLS

Languages: Python, R, SQL, BigQuery, JavaScript, C++, C, VBA, HTML, CSS, Prolog, Haskell, Julia, CUDA
Software and OS: Tableau, Excel, G Suite, Git, Shiny, dplyr, CronR, RStudio, RegEx, PyTorch, Keras, OpenCV, Scikit-learn, Pandas, NumPy, Matplotlib, LaTeX, Bash, GNU/Linux, gdb, jQuery, Bootstrap, Adobe Suite, Flask, MS SQL Server, Jupyter Notebooks, MongoDB
Certifications and Expertise: Data Structures, Algorithms, Statistics, Grant Writing, Public Speaking, Teamwork, Physical Science
Responsible Conduct of Research, Conflict of Interest, and Human Subject CITI certifications, Advanced Machine Learning certification

PROFESSIONAL EXPERIENCE

The Resource Group, Consultant, Strategic Sourcing Optimization | St. Louis, MO February 2023 - Current
- Build and maintain 30+ data pipelines and 15+ analytical dashboards for Ascension's healthcare supply chain management
- Consult with contract design and sourcing teams of 200+ associates to optimize contract lifecycle management and forecasts

The Resource Group, Data Analyst Intern | St. Louis, MO May 2022 - August 2022
- Collaborated with 30+ industry professionals and interns to identify off-contract spending susceptible to admin fees
- Linked off-contract purchases through SQL databases using Python, SQL, and Tableau to discover and apply admin fees
- Constructed a Tableau dashboard containing $50 billion dollars in purchases to highlight untracked spend and under-reported sales
- Identified over $30 million dollars in untracked spend across all vendors for FY21 with $20 million in collectible revenue
- Created a geospatial Tableau dashboard of 60+ distributor warehouses to highlight costly freight and re-routed lines

ThermoAI, Artificial Intelligence Research Associate | Binghamton, NY December 2021 – February 2023
- Implemented hardware to extract over 60,000 images a week from an analog camera onto a remote server for parsing
- Collected and clean combustion sensor data retrieved from a boiler system providing heat for over 90 buildings and 20,000 people
- Performed exploratory data analysis using feature extraction, pivot tables, clustering, and graphs on boiler, lab, and power plant data
- Designed live interface to track flame statistics and monitor flame position to stay within 20% of optimal location

Jeffrey A. Miller Catering, Site Supervisor | Stanhope, NJ March 2017 - July 2023
- Supervised social event and wedding venues with up to 300 attendees
- Directed setup, takedown and cleanup of venue facilities, property, and equipment
- Managed duties of assistant site supervisor and 20+ other employees throughout events

RESEARCH EXPERIENCE

Binghamton University, Visiting Scholar | Vestal, NY July 2020 - November 2024
- Conducted grant-funded research in materials science for generating novel Metal-Organic Frameworks with high adsorption
- Utilized and adapted state-of-the-art methods in machine-learning including Fusion models, Graph neural networks, and 3D-GANs
- Shared techniques and results for reducing time to generate samples over Monte Carlo simulations by over 30%
- Presented methods and findings at the APS Physics and KGML 2021 conferences

Binghamton University, Research Assistant Lead | Vestal, NY Fall 2019 - December 2022
- Managed team of four under faculty advising for automatically parsing high-stakes-lying video clips with machine learning
- Applied model on 10+ poker videos to label information for potential applications including police interrogations and court hearings
- Implemented optical character recognition, facial recognition, and Monte Carlo simulations to automate image labeling
- Employed 50,000+ high-stakes-lying generated images on a transfer learning deep neural network to test reliability and accuracy of data
- Presented findings at the ICIAP 2021 conference in Lecce, Italy for our published paper and dataset

PROJECT EXPERIENCE

Binghamton University, HackBU Competition | Vestal, NY February 2022
- Partnered with another student to develop a regression deep learning multi-layer perceptron for predicting wage disparity
- Compiled 25+ million samples of census data from the Current Population Survey and Annual Social and Economic Supplement
- Cleaned data through replacing null values, applying feature importance, normalizing variables, and using one-hot encoding
- Published working model onto a Flask web app to provide optimal salary based on user input to alert underpaid individuals