Jacob Barkovitch

732-788-0795 ● jbarkov1@binghamton.edu ● https://www.linkedin.com/in/jake-barkovitch/

EDUCATION

Binghamton University, State University of New York, Thomas J. Watson College of Engineering and Applied Science
Bachelor of Science in Computer Science **Expected December 2022**
Dean's Honors List: Fall 2019 – Spring 2021, Spring 2022
Relevant Courses: Social Media Data Sci Pipeline CS 515**,** Advanced Object-Oriented Design CS 540, High Performance Computing CS 547
Conferences/Publications: KGML 2021, APS Physics March Meeting 2021, ICIAP 2021, NeurIPS 2021, Research Days 2019-2020

TECHNICAL SKILLS

Proficient Languages: Python, R, SQL, BigQuery, JavaScript, C++, C, VBA, HTML, CSS, Prolog, Haskell, Julia, CUDA
Software and OS: Tableau, Excel, G Suite, Git, PyTorch, Keras, OpenCV, Scikit-learn, Pandas, TensorFlow, NumPy, Matplotlib, SciPy, LaTeX, Bash, GNU/Linux, gdb, Valgrind, jQuery, Bootstrap, Adobe Suite, Flask, MS SQL Server, Jupyter Notebooks, MongoDB
Certifications and Expertise: Data Science, Machine Learning, Statistics, Data Structures, Algorithms, Graphic Design, Regular Expressions, Parallel Computing, Teamwork, Communication, Presentation Skills, Research Skills, Grant Writing, Physical Science Responsible Conduct of Research, Conflict of Interest, and Human Subject CITI certification, Advanced Machine Learning certification

PROFESSIONAL EXPERIENCE

The Resource Group, Spend Management Solutions, Consultant | St. Louis, MO **February 2022 - Current**

- Build out 30+ data pipelines and 15+ analytical dashboards for the Ascension healthcare resource and supply chain management
- Work with the contract design and sourcing teams to optimize savings forecasts and contract lifecycle management

The Resource Group, Spend Management Solutions, 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 2022**

- Implement hardware to extract over 60,000 images a week from an analog camera onto a remote server for parsing
- Collect and clean combustion sensor data retrieved from a boiler system providing heat for over 90 buildings and 20,000 people
- Perform exploratory data analysis using feature extraction, pivot tables, clustering, and graphs on boiler, lab, and power plant data
- Design live interface to track flame statistics and monitor flame position to stay within 20% of optimal location

Binghamton University, Research Assistant Lead | Vestal, NY **February 2021 - December 2022**

- Manage team of four under faculty advising for automatically parsing high-stakes-lying video clips with machine learning
- Implement optical character recognition, facial recognition, and Monte Carlo simulations to automate image labeling
- Employ 50,000+ high-stakes-lying generated images on a transfer learning deep neural network to test reliability and accuracy of data
- Apply model on videos to label information for potential applications including police interrogations and court hearings
- Presented findings at the ICIAP 2021 conference in Lecce, Italy for our published paper and dataset

Binghamton University, Research Assistant | Vestal, NY **July 2020 - December 2022**

- Conduct grant-funded research in materials science for generating novel Metal-Organic Frameworks with high adsorption
- Utilize and adapt state-of-the-art methods in machine-learning including Fusion models, Graph neural networks, and 3D-GANs
- Develop algorithms for predicting physical properties of Metal-Organic Frameworks such as pore limiting and largest cavity diameters
- Share techniques and results for efficient and safe hydrogen storage, carbon capture, and air purification
- Presented methods and findings at the APS Physics and KGML 2021 conferences

Jeffrey A. Miller Catering, Site Supervisor | Stanhope, NJ **March 2017 - July 2023**

- Supervised wedding venues with up to 300 guests
- Directed setup of venue facilities before events and weddings
- Managed the duties of assistant site supervisor and 20+ other employees throughout events
- Ran takedown, cleanup, and lockup of wedding venues and on-site buildings

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