Tyrell Baker

Marina, CA

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DATA SCIENTIST

Qualifications Profile

Multifaceted and well-organized Data Scientist with a strong foundation in data analysis, statistical modeling, and machine learning techniques. Proficient in Python, R, and SQL, with hands-on experience in data preprocessing, visualization, and predictive model development

Core Competencies

Data Analysis	Statistical Modeling
Machine Learning	Data Preprocessing
Data Visualization	Model Development
Data Cleaning	Predictive Modeling

Professional Experience

Deep Data Laboratory, University of California, Irvine

Data Science Research Fellow — 2024

- Analyzed over four million data points among adolescents to examine changes in intrinsic motivation and physical activity over time, identifying significant correlations and patterns using Python libraries such as Pandas, NumPy, and Scikit-learn.
- Investigated gender differences, baseline fitness levels, and BMI percentiles in response to interventions, uncovering key insights into participant behaviors and outcomes.
- Conducted detailed heart rate data analysis to evaluate improvements in participants' ability to stay within target heart rate zones during physical education classes, leveraging Matplotlib and Seaborn for data visualization.
- Performed mediation analysis to determine if intrinsic motivation changes influenced physical activity, providing insights into behavior change mechanisms.

Carnegie Institution for Science, Washington, DC

Data Science Intern — 2023

- Analyzed over 300 million data points from the FLUXNET-CH4 dataset, covering 79 global sites, including 42 freshwater wetlands, using Carnegie's High-Performance Computing (HPC) resources to identify primary drivers of methane (CH4) fluctuations.
- Applied data cleaning and preprocessing techniques, using correlation coefficients for feature selection to ensure data accuracy with Pandas and NumPy.
- Executed linear regression modeling with statsmodels on over 1.2 million time-series records, translating data into actionable insights
- Visualized findings with Seaborn and Matplotlib, creating scatter plots, time series graphs, and heatmaps to facilitate presentations for non-scientific audiences

Professional Experience (continued)

Stanford University, Stanford, CA

Head Teaching Assistant — 2023

- Directed and supervised a team of 50 instructors for Stanford's global initiative, "Code in Place," ensuring seamless delivery of their Intro to Python course to a diverse international audience.
- Spearheaded the development of a comprehensive curriculum for the instruction team, strategically optimizing class time allocation and enhancing the overall learning experience for students.
- Demonstrated technical expertise by swiftly resolving issues within Stanford's proprietary development environment, mitigating downtime and significantly reducing disruptions to the instructional process, resulting in improved efficiency and productivity.
- Collaborated with colleagues to identify, address, and prevent technical obstacles, fostering a more streamlined and productive teaching environment while ensuring a smoother learning experience for students.

SLAC National Accelerator Laboratory, Stanford University, Menlo Park, CA

Software Development Intern — 2022

- Seamlessly incorporated the Nelder-Mead optimization function into the current accelerator software, utilizing generator and operator functions in Python's Scipy library, enhancing the software's capabilities and efficiency.
- Modified the existing Xopt GUI to facilitate the integration of Nelder-Mead for accelerator prediction, improving the user experience and enabling more accurate predictions.
- Spearheaded the successful rollout of the Xopt Nelder-Mead feature to a team of 150 accelerator operators, meticulously optimizing the implementation to identify and rectify any software bugs, ensuring a smooth and error-free user experience.
- Collaborated closely with the team to provide technical expertise, troubleshoot issues, and contribute to the overall enhancement of the accelerator software, facilitating its effective use in critical operations.

EDUCATION

California State University, Monterey Bay, Marina, CA
Bachelor of Science in Computer Science

TECHNICAL SKILLS

Python / Java / SQL / Pandas / Numpy / SciPy / Matplotlib / Seaborn / Microsoft Office (Word, Excel, PowerPoint, Outlook, Access, Publisher) / Microsoft Visio / Microsoft SharePoint / Adobe Photoshop / Google Docs / Google Drive / Google Calendar / Google Plus / QuickBooks / Dropbox / Salesforce