Aditya (Adi) Kanteti

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Education

University of California, Santa Cruz   Sept 2024 - June 2026
- In-progress **B.S. Computer Engineering**, planned minor in Environmental Sciences and Computer Science
- Coursework: Machine Learning, Deep Learning, Computer Architecture, Computer Networks, C Programming, Assembly

University of California, Berkeley   Aug 2023 - May 2024
- Visiting student, studied **Electrical Engineering and Computer Science** (EECS).
- Coursework: Signal Processing, Controls/Controllability, Circuit Analysis, Linear Algebra, Differential Equations

Berkeley City College   Aug 2022 - May 2024
- **A.S. in Computer and Electrical Engineering**, A.S. Mathematics magna cum laude, member of Society of Scholars
- Coursework: C++, Java, SQL, Lisp/Scheme, Object Oriented Programming, Electronics, Circuit Analysis, Physics, Mathematics

Skills

Programming | Experienced - Python | Proficient - Scala, SQL, Bash | Novice - C++, R, Java, Scheme, IBM Qiskit, Lisp

Tools: Apache **Spark**, **AWS**, BigQuery, Git, GitHub/BitBucket, **Scikit-Learn**, TSLearn, **Pandas**, NumPy, Seaborn, Matplotlib
Cloud Computing, **Data Structures and Algorithms**, **Machine Learning**, Time-Series Forecasting/Clustering, and Serverless

Work Experience

Student Assistant III – **Machine Learning**   Lawrence Berkeley National Laboratory   Nov 2023 – Oct 2024

I developed load shifting/forecasting algorithms for water heaters (HPWHs) and thermostats at the Building Technologies Division.
- Served as technical lead for a PG&E and SCE pilot program. Built a signal processing tool using **Python** with **TSLearn** and **scikit-learn** to achieve 95% **clustering** accuracy with Gradient Boosting Regressor, Barycenter Averaging, and other algorithms
- Developed advanced control signal **algorithms** using Python which reduced peak electricity usage by 70% and costs by 29%
- Built industry smart-thermostat **imputation** tools using KNearestNeighbors, KShape, and Dynamic Time Warping with Python
- Developed Bidirectional Long Short-Term Memory (**BiLSTM**) networks to improve **predictive** accuracy in energy demand
- Utilized Dynamic Time Warping (DTW) algorithm to align **time-series** data from malfunctioning sensors in a pilot system
- Met monthly with stakeholders from PG&E/SCE to help guide research goals, timelines, and technical documentation.

Student Assistant III – **Data Engineering**   Lawrence Berkeley National Laboratory   Jan 2024 – Oct 2024

I built and maintained large-scale data pipelines to analyze research data across teams at LBNL and the Energy Technologies Area
- Developed data analysis pipelines using **SQL**, Scala, and Apache Spark to process 3TB of data, ensuring federal data compliance
- Utilized on-site supercomputing resources to achieve **$30k** in cost savings compared to public cloud services (AWS/Azure).
- Built tools for TB-scale data transfers using Google Service Accounts/APIs to streamline post-processing and data accessibility

Student Assistant I – **Data Analysis**   Lawrence Berkeley National Laboratory   May 2023 – Nov 2023

I assisted senior scientists and engineers with analyzing research results and writing reports/papers on topics related to energy grids
- Build a tool to quantify Scope 2 greenhouse gas (GHG) emissions using Python, Pandas, and Seaborn. Led to a journal pub.

Research Papers

IEEE DC Microgrid (ICDCM 2024) - co author
A Power-Centric Digitally-Managed 48V Distribution Technology

ACEEE 2024 Summer Study on Energy Efficiency in Buildings - co author
Using advanced M&V data to quantify the greenhouse gas impact of energy efficiency projects in commercial buildings

Leadership Experience

President - Electronics and Engineering Club at Berkeley City College   August 2022 - August 2024
- Led a team of **14 officers**, with another +200 club members. Focused on organizing events and long-term investments.
- Managed and tracked use of over **$12,000** in club funding for use in tech, events, and socials for club members and staff.

Personal Projects

Quantum Optimization in Resource Management: Pool Pump Load Shifting for Reducing Costs. - **Personal Project**
- Working on a tool to optimize pump schedules in response to dynamic price signals to reduce costs, energy grid strain, and emissions.
- Encoded signals into a QUBO (quadratic unconstrained binary optimization) then using quantum **algorithms** to solve the system

Building a Terabyte-Scale Data Lake on Google Drive for R&D Without Paying - **Personal Project**
- In progress tool that turns an enterprise Drive account into a data lake for managing **TB-scale** simulation results for free.
- Building domain-specific **data structures** to handle serialization/deserialization of TB-scale data with Google Service Accounts