Lead Data Scientist

- Analyzed large, archived and operational datasets to identify key metrics and actionable insights, leading to improved client understanding of programs, initiatives, grants performance; furthered clients' mission as data-driven organizations
- Over $140 million in combined financial analyses performed, ranging from donations to research grants and charity events
- Derived ground-truth insights to clients' operation with statistical inference, reflected clients' past operation, checked recent business decisions, and inform future decisions. Performed feature selection/engineering for informative attributes
- Specialize in geo-/demographic, financial, operational & business strategies analyses, dashboarding, turning data to action

WORLD DESIGN ORGANIZATION | Design Services Society | San Diego, CA **Jan 2024 – Jun 2024**
Housing Solutions Consultant & **Designer in Residence** *(Science & Technology Network)*

- Advised the ADUGenius project on ADUs as an innovative housing solution, covering financing structures, tax benefits, saving strategies, building costs, ordinance adoption, setbacks, myths, designs, sustainability, and useful policies/programs
- Served a secretary role in meetings and correspondence between stakeholders from the United States, Mexico, the UC San Diego Design Lab, and impact project leads to assist San Diego-Tijuana international collaboration projects
- Performed administrative duties for the Science & Tech Network, including event coordination, media design, monthly updates to the World Design Capital committee, event MC/moderator at events with community members & project leads

UC SAN DIEGO Urban Studies & **Planning | Academic Department | La Jolla, CA** **Sep 2023 – Jun 2024**
Affordable Housing Research Assistant & **Data Science Fellow** *(Mentor – Dr. Feiyang Sun)*

- Reported affordable housing policy incentives and cost factors, emphasizing public improvements and tax incentives
- Networked with industry professionals to study affordable housing market feasibility, focused on LIHTC and ADUs
- Received sponsorship to network with SDGBC to study green building techniques and integration with affordable housing
- Programmed a bespoke algorithm to parse property data from CoStar into a tabular format for non-commercial purposes
- Applied statistics and machine learning on over 5000 LIHTC projects to derive factors influencing fund allocation
- Utilized analysis methods for social science: feature engineering, clustering, attribute stratification, marginal error analysis

NIEMA LAB at UC San Diego | Computer Science & **Engineering | La Jolla, CA** **Sep 2022 – Oct 2023**
Data Science Trainee & **Researcher** *(Mentor – Dr. Niema Moshiri)*

- Developed an interactive application to visualize Covid-19 time-series data with variant segmentation
- Programmed a bespoke data-smoothing algorithm that selectively reads data upon user requests to optimize runtime
- Reduced initial runtime by 97% (5s to sub-0.1s) with caching/memoization and efficient data structure implementation
- Benchmarked data compression techniques to optimize serialization efficiency and expedite loading speed
- Wrote 7 research notebooks to uncover patterns in 30+ large-scale datasets involving 3000+ cancer patients
- Exceeded 87% accuracy across diverse evaluation metrics, in accurately predicting breast cancer recurrence status
- Analyzed disparities and data collection gaps to ensure ethical and responsible data science practices
- Nominated & gave a conference presentation, special commendation by the Semiconductor Research Corporation

GOING SOLO | Business Intelligence & **IT Consulting | Johannesburg, South Africa** **Jun 2022 – Aug 2022**
Lead Data Analyst Intern

- Implemented a character-based word embeddings model to improve words/phrases cognition for text classification
- Developed an automated Bayesian text classifier to streamline data labeling processes
- Analyzed an S&P 500 company's stock/financials and developed an interactive dashboard in Tableau
- Enhanced and maintained a PM dashboard, enabling real-time progress tracking/reporting to supervisors
- Managed projects and led team communications across 7+ time zones for effective collaboration and timely delivery

➔ Exceeded internship expectations by proactively implementing an automated data labeling tool with machine learning, effectively saving time and resources, setting new standards for efficiency and problem-solving at the company.

DELOITTE Data Science Mentorship Program | Business Consulting | San Diego, CA **Feb 2022 – May 2022**
Data Science Mentee

- Utilized ARIMA models to generate employment metric forecasts and predict market behaviors due to Covid-19
- Conducted in-depth analysis to extract actionable insights using multiple linear regression, EDA, and visualization
- Collaborated closely with a mentor from Deloitte, receiving personalized guidance and support on a weekly basis
- Presented findings to an audience of Deloitte practitioners and advisors from the Halıcıoğlu Data Science Institute

➔ Took on a lead role when the team needed leadership, taking charge of task assignments, scheduling meetings, and cultivating a cohesive data story; created a positive, motivated team environment, on-time delivery, & quality assurance.

REAL ESTATE PROJECTS

Cognitive City Twins Portfolio (pndang.com/projects) | **Team** & **Personal Project**

Built digital twins for UCSD, Chula Vista, and Hollywood's Vinyl District with Cesium for Unreal. Focused on commercial real estate, property modeling, & urban design applications. Demonstrated how IoT technology and AI can transform the built world.

H2 Hillcrest | Personal Project

A design-focused proposal for a state-of-the-art urban infill, mixed-use redevelopment project in Hillcrest, San Diego, to address housing needs, support multimodal transportation, and enhance the local economy with strategic commercial uses. Led by human-centered, climate-resilient placemaking values, with considerations for the lifestyles and culture inherent to Hillcrest.

San Jose General Plan Evaluation | Personal Project

A comprehensive evaluation of the Envision San Jose 2040 General Plan, featuring a 1-on-1 interview with Mr. Pierluigi Oliverio, one of 37 Task Force members and a San Jose City Councilmember in District 9, for personal comments on the Envision process.

Ho Chi Minh City – Life by the Sidewalk | Personal Project

A survey paper on the evolution of HCM City's urban landscape over time, with in-depth chronological coverage of significant historical events and periods, lifestyle and cultural preferences, demographics, and varying approaches to urban design.

Urban Economic Determinants of Industrial Location | Personal Project

A discussion paper on the theories of industrial location, with emphasis on environmental regulations, tax incentives, and location factors influencing the decisions to locate (or relocate) by firms. Features case studies of Amazon and the wood furniture industry.

San Jose General Plan Evaluation | Personal Project

A comprehensive evaluation of the Envision San Jose 2040 General Plan, featuring a 1-on-1 interview with Mr. Pierluigi Oliverio, one of 37 Task Force members and a San Jose City Councilmember in District 9, for personal comments on the Envision process.

Public-Private Partnerships in Urban Planning | Personal Project

A research paper on the roles and significance of effective public-private partnerships during the early formation of modern cities (early to mid-industrialization), with case studies from Britain and Italy.

Cities Assessments | Personal Project

A 2-in-1 discussion and analytical paper on the idea of Paris as a Rational City, and Miami as a Transnational City, building from key points in Paul Knox's "Atlas of Cities", including global migration, cultural, economic, industries, & geopolitical attributes.

DATA SCIENCE PROJECTS

D3 San Diego Multifamily Visualizer | Team Project

A D3.js web app to answer the question "Which San Diego submarket for your next multifamily investment?", data queried from CoStar is visualized on a choropleth map of San Diego, highlighting multifamily vacancy rates, built/renovation year, parking/unit.

Who's Dominating the Game | Team Project

A D3.js + Svelte web app showing a temporal analysis of console game genres and publishers' prevalence by sales and crit scores.

Statistical Inference for U.S. Presidential Elections | Team Project

A detailed analysis of twelve elections for the U.S. presidency between 1976 and 2020 for a deeper understanding of their nature. Analyses performed include exploratory, goodness of fit (LRTs), similarity/dissimilarity analysis of distributions, predictive (ML).

OPUBOD - Occupancy Prediction Using Building Operation Data | Personal Project

A time-series machine learning project to discover relevant building operation metrics to predicting occupancy. Examined models include linear regression, auto-regression, and recurrent neural nets, plus statistical analyses for feature selection.

Game Recommender | Personal Project

Performed (1) play prediction using collaborative filtering and (2) hours played prediction using latent-factor models with coordinate descent and gradient descent. All models were implemented from scratch with analogous results to the Surprise library.

Solar-Powered Smart Lighting for Sustainable Living | Team Project

Built a solar-powered IoT device capable of collecting live sensor data, adjusting lighting, sending data to a MySQL database using MCU Wi-Fi with synchronous communication. Developed a data processing script to query, transform, and visualize data.

Exploratory and Predictive Analytics for Precision Medicine | Team Project

A data project for Personalized & Secure Drug Discovery by the Semiconductor Research Corp. Conducted intensive exploratory and predictive analyses to predict breast cancer recurrence using biomarkers, medical, and lifestyle data from over 3,000 patients.

Illuminating Cognizance | Personal Project

A look into major power outages in the U.S. to assess statistical relationships, perform hypothesis testing, data missingness audits, and derive predictive power using ML and feature engineering, built in pipelines with diverse accuracy metrics and evaluations.

World Happiness Report 2022 | Team Project

Analyzed global happiness using data from the 2022 World Happiness Report to study factors influencing well-being worldwide.