

Derek Wen

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EDUCATION

University of California, Los Angeles (UCLA) 2026
M.S. Applied Statistics and Data Science **GPA 3.96 / 4.0**

University of California, San Diego (UCSD) 2024
B.S. Data Science **GPA 3.98 / 4.0**
Awards: **Summa Cum Laude**

PROFESSIONAL EXPERIENCE

Amazon - Prime Video - Software Development Engineer Intern June 2025 – September 2025

- Developed a prototype web video player supporting a **new proprietary Prime Video manifest format**, **reducing Time to First Frame (TTFB) by up to 600ms** compared to the existing DASH implementation
- Created a parser for the proprietary manifest format leveraging the binary encoding format FlatBuffers, achieving **0ms parsing time** during playback startup
- Independently led the design, implementation, and testing of playback logic, consulting Principal and Senior Engineers when resolving complex issues to ensure compatibility and optimized performance

Claritas - Data Science Intern April 2023 – February 2024

- Developed a scalable PySpark pipeline, filtering over **1 million** IP addresses across diverse data sources using multiple API integrations
- Automated the extraction of campaign data from Parquet files, the calculation of daily data quality metrics, and the development of dynamic dashboards, **saving around 2 hours of daily manual work**

Nurlink Technology - Data Analyst Intern July 2021 – Aug 2021

- Created an automation tool to clean and preprocess incoming daily circuitry data and existing circuitry data, **reducing manual processing time by 1 hour per day**
- Applied principal component analysis for 2D visualizations, isolating noise in output power

San Diego State University (SDSU) - Data Analyst Intern Jan 2019 – June 2020

- Analyzed integrated circuit data, processing over **1,000 features** across datasets of **50,000+ samples**, identifying key trends and creating visualizations to enhance circuit performance

PROJECT & SKILLS

Enhancing Utility Pole Monitoring with Computer Vision September 2023 – March 2024

- Developed and fine-tuned a DETR-based computer vision model to detect utility poles and classify its material type, achieving a **0.75 recall** and **0.80 precision**
- Automated the collection of over **800 images** using the Google Street View API
- Leveraged Docker and PostgreSQL to create, update, and query utility pole databases
- Created an interactive demo that traverses streets, outputs pole coordinates and material types to a database, and visually highlights detected poles with bounding boxes

Skills: Python, SQL, R, JavaScript/TypeScript, HTML/CSS, Pandas, NumPy, PySpark, PostgreSQL

Technologies: AWS (Lambda, EC2, S3, IAM), Git, Docker, Databricks