

JAE LEE

(708) 413-7460 | jyleesd@gmail.com | Chicago, IL

Product Operations and Analytics Director with a proven record of driving efficiency in regulated biotech environments. Expert at building and scaling the technical operations backbone to support a 27x revenue surge in one year (from \$23M to \$620M), while leading products through FDA submission and saving over \$25M in COGS.

WORK EXPERIENCE

Head of AI and Automation

JTaurusPartners LLC | Remote

May 2024 – Present

- Designs, fine-tunes, and deploys enterprise-grade GenAI solutions utilizing OpenAI LLMs, GPT embeddings, and vector search to process over 300k documents for advanced semantic search and knowledge management (RAG/ReAct).
- Engineers and maintains agentic systems with n8n, Docker, and Kubernetes to drive automated data ingestion, ensure data traceability, and develop internal information query and transfers.
- Advise strategics to client organizations on AI strategy, data stack modernization, and workflow optimization, delivering quantifiable improvements in operational efficiency and project delivery speed.

Director, Product Operations and Analytics

SIRO Diagnostics | Remote

Sep 2024 – Nov 2025

- Designs, fine-tunes, and deploys enterprise-grade GenAI solutions utilizing OpenAI LLMs, GPT embeddings, and vector search to process over 300k documents for advanced semantic search and knowledge management (RAG/ReAct).
- Engineers and maintains agentic systems with Docker and Kubernetes to drive automated data ingestion, ensure data traceability, and develop internal information query and transfers.
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Staff Platform Engineer

Cue Health | Remote

Jul 2023 – May 2024

- Spearheaded the technical transfer of complex multiplex assay products, orchestrating design reviews and validation protocols with R&D, Operations, Quality, and Regulatory teams to achieve FDA submission and transfer to Ops
- Optimized a core signal processing algorithm via A/B testing and fitting, successfully reducing false positive rates by 85% while maintaining diagnostic sensitivity.
- Branched and deployed a Python-based post-market surveillance engine to handle over 1M+ daily runtime logs without interfering with existing pipeline. This automation cut incident triage time by 60% and established a rapid feedback loop

Engineering Manager, Technical Operations

Cue Health | San Diego, CA

Sep 2020 – Jul 2023

- Established the Technical Operations department from the ground up during a \$481 M DoD contract that scaled output from 5k to 100k (20x) CoV-19 tests per day and delivered 6M cartridges on schedule
- Developed and led a 12-person cross-functional team that served as the company's central data intelligence unit, overseeing all analytics, data science, non-conformances, and continuous improvement for the full product lifecycle (pre-production, QC, post-market surveillance) as company revenue increased 27x from \$23 M (2020) to \$618M (2021).
- Closed over 300 NCRs and 20 CAPAs; deploying process, product, and firmware fixes/improvements that cut QC failure rate 50% and field mechanical defects 80%, saving over \$25M in COGS
- Owned the end-to-end data strategy, directing data science, analytics, and BI functions across the entire product lifecycle - from R&D and manufacturing QC to post-market surveillance and customer support - lashing issue-detection latency from days to minutes
- Fast-track promoted three times (from Bioengineer, Sr. Bioengineer, Eng. Manager, to Staff Platform Engineer)

Research Scientist

Nanoscale Bioengineering Lab, Sanford Consortium | San Diego, CA

Jan 2020 – Sep 2020

- Engineered polymeric nanocapsules (PNCs) that tune size and z-potential to boost nucleic-acid cargo stability and target-cell uptake while reducing in-vivo toxicity
- Ran DOE-driven optimization (DLS, TEM, cell-viability assays) that extended PNC shelf life 3x and achieved over 50% improved transfection efficiency vs. benchmark formulations

UCSD Biosensors Laboratory | San Diego, CA

Sep 2018 – Jan 2020

- Built a Python algorithm script that fuses ARMA/PID signal-filters with XGBoost regression to translate subcutaneous sensor data into real-time blood-glucose estimates, boosting accuracy 45% and cutting latency 25%; stress-tested performance across over 10k Monte-Carlo runs to set sampling-rate specs
- Delivered a simulation platform adopted by the lab's device partner to set sensor sampling specs within FDA-submission performance targets

Research Assistant

The Scripps Research Institute (TSRI) | San Diego, CA

Jun 2017 – Jan 2020

- Co-authored a high-impact Nature paper that identified PGRMC2 as the first intracellular heme chaperone, revealing its central role in adipocyte thermogenesis and systemic glucose homeostasis
- Drove experimental design across CRISPR mutagenesis, RNA-seq, proteomics and in-vivo phenotyping to map the heme-trafficking pathway and its metabolic impact
- Executed cross-lab bioinformatics and efficacy studies that validated a first-in-class PGRMC2 small-molecule activator, reversing fasting hyperglycemia and insulin resistance in obese-diabetic mice and established a therapeutic direction for metabolic disease

Publication: Galmozzi A, Kok B.P., Kim A.S., Montenegro-Burke J.R., Lee J.Y., et al. PGRMC2 is an Intracellular Heme Chaperone Critical for Adipocyte Function. *Nature* 576, 138-142 (2019) doi:10.1038/s41586-019-1774-2

EDUCATION

Bioengineering | Master of Science and Bachelor of Science of

GPA: 4.00

University of California, San Diego (UCSD)

Awards: Volt Alumni Scholarship, Alice M. Marriott Scholarship, Golden President's Volunteer Service Award, Certificate of Congressional Recognition, California Legislature Assembly Award

SKILLS

- **Data Visualization and Management Platforms:** Looker, Power BI, Tableau, FIJI/ImageJ, Jira, Confluence, Slack
- **Data Analytics:** Python (pandas, NumPy, scikit-learn, XGBoost), R, MATLAB, SQL, MongoDB / NoSQL, Monte-Carlo simulation, signal-processing
- **AI / Machine Learning:** A/B Testing, CI/CD, GPT-based knowledge graphs & chatbots, LLM prompt engineering, ML model fine-tuning, time-series forecasting, anomaly detection
- **Cloud & Data Platforms:** Google Cloud Platform (BigQuery, Cloud Functions, Looker Studio), AWS (S3), Power BI, Tableau, GraphQL APIs, Docker, Kubernetes.
- **Quality, Regulatory & Operations:** ISO 13485 & 21 CFR 820 QMS, CSLI and ANSI guidelines, CAPA / NCR management, technical transfer (DHF, V&V, risk files), lean / agile manufacturing, OKR & roadmap ownership, budget & resource modeling
- **Leadership & Product Strategy:** Built and scaled Technical Ops at unicorn startup (12 FTEs; 20× throughput surge), led cross-functional squads across 3 time zones, BARDA / DoD contract execution, FDA submission coordination
- **Scientific & Lab Techniques:** Molecular diagnostics (multiplex PCR, assay optimization), nucleic-acid nanocapsule design, CRISPR mutagenesis, multi-omics analysis (RNA-seq, LC-MS proteomics), in-vivo metabolic studies