Jessica Parks

Data Engineer │ Backend Engineer

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jessicalparks in
704-813-7970 ▢

Technical Skills </>

Languages: Python, SQL

AWS Services: API Gateway, Athena, Batch, CloudFormation, CloudWatch, DynamoDB, EC2, ECR, EventBridge, Glue, IAM, Kinesis, Lambda, RDS/Aurora, Route 53, S3, Secrets Manager, SNS, SQS, Step Functions, Storage Gateway

Data Engineering: Data Modeling, Data Lake, Event-Driven Architecture, ETL, Workflow Orchestration

Databases: DynamoDB, S3 Data Lake, Athena, PostgreSQL

DevOps & Tools: Docker, GitLab, GitHub, CI/CD, IaC

Experience 💼

PRINCIPAL DATA ENGINEER `(2024-present)`   2021–present
SENIOR DATA ENGINEER `(2021-2024)`

ProFound Therapeutics │ Boston, MA (Remote)

- Architected enterprise data strategy and cloud infrastructure on AWS, supporting 20+ computational and wet-lab scientists across multi-omics discovery platform and 5+ active research programs.
- Built centralized data lake with S3, Glue, and Athena, consolidating 50+ data sources and enabling both analytics and ML model development. Implemented IaC patterns for other engineers to easily add new data sources.
- Engineered and optimized NGS workflows using Nextflow, AWS Batch, Lambda, DynamoDB, EventBridge, and Step Functions, processing 200GB+ genomics data monthly.
- Implemented Aurora Serverless PostgreSQL database with automated ETL pipelines, serving as a data source for multiple internal web applications.
- Delivered containerized web applications with Python and Plotly/Dash, enabling self-service data exploration and data registration for 15+ scientists.
- Established GitLab CI/CD framework with CloudFormation IaC, automating deployment of 30+ applications and microservices to AWS in both dev and prod environments and reducing time to release from weeks to hours.
- Implemented web application logging pattern using CloudWatch, Kinesis, S3, Glue, and Athena along with a Python analytics dashboard, providing usage insights across 5+ internal applications.
- Collaborated with wet-lab scientists to design and maintain data models for 50+ entity types and 30+ assays, ensuring data consistency and enabling cross-program analytical insights.
- Streamlined instrument data integration using AWS Storage Gateway, S3 and Benchling; and coordinated secure data transfers with 10+ CROs through S3 and IAM policies.

DATA SCIENTIST AND ENGINEER   2015–2021

AgBiome │ Durham, NC

- Modernized protein discovery platform, implementing scalable cloud-native Python workflows that identified and guided prioritization of 1000+ candidate proteins.

- Collaborated with web-lab scientists and external software development team to collect assay data in centralized data lake on AWS S3, migrating 2+ years of lab assay data.
- Engineered multiple cloud-native data workflows using CloudFormation, Batch, Lambda, and Step Functions, supporting distributed processing of genomics datasets.
- Built interactive dashboards with Plotly/Dash and QuickSight, delivering data products to scientific teams and enabling data discovery and self-service analytics for scientific and IP teams.

GRADUATE RESEARCH ASSISTANT
2020

North Carolina State University │ Raleigh, NC

- Built scalable bioinformatics pipeline using Snakemake and Singularity on Slurm HPC cluster, processing 20+ Ribo-seq datasets and enabling cross-lab comparative analyses for research group.

STUDENT CONSULTANT
2020

North Carolina State University │ Raleigh, NC

- Co-built a DNA meta-barcoding workflow using Python, R, and Conda on HPC infrastructure, reducing client processing time and eliminating manual data handling.

RESEARCH ASSOCIATE
2013–2015

AgBiome │ Durham, NC

- Optimized microbial isolation protocols, implementing selective strategies that scaled to 40,000+ microbes (~35% of company collection).
- Identified candidate proteins from microbial genomes, and developed Python workflow to streamline data preparation for patent filing. This protein collection was the basis for research partnerships with multiple biotech companies.
- Managed database development project, coordinating with external vendor to build PostgreSQL/Ruby-on-Rails platform scaling from 10 to 100+ users over 7+ years.

UNDERGRADUATE RESEARCH ASSISTANT
2011–2012

University of North Carolina at Chapel Hill │ Chapel Hill, NC

- Awarded UNC-HHMI Future Scientists and Clinicians Fellowship for two consecutive summers.
- Executed forward genetic screening protocol, isolating multiple C. elegans mutants and implementing SNP mapping with whole genome sequencing for mutation identification.

Education 🎓

MASTERS 2019–2020
BIOINFORMATICS
North Carolina State University

BACHELOR OF SCIENCE 2009–2013
CHEMISTRY AND BIOLOGY
University of North Carolina at Chapel Hill

Certifications ✸

aws AWS Data Engineer - Associate 2025-2028

aws AWS Solutions Architect - Associate 2022-2025

aws AWS Developer - Associate 2021-2024

aws AWS Cloud Practitioner 2020-2028