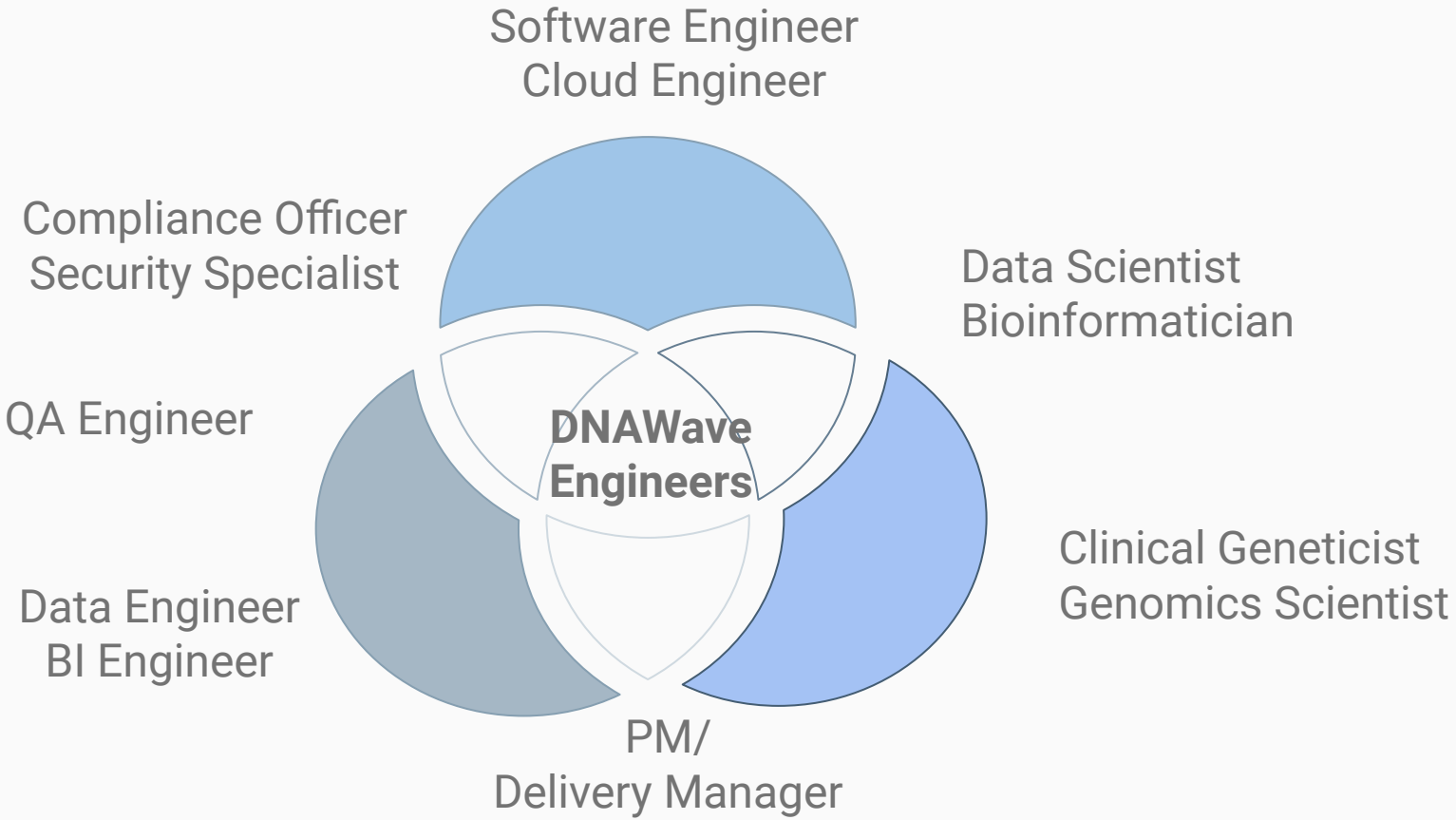

DNAWave
Genomics Solutions

DNAWave Company

At the forefront of revolutionizing genomics research by providing cutting-edge solutions for data processing, cohort building, and data governance

Our mission is to empower researchers with the modern tools they need to accelerate discoveries and improve healthcare outcomes

Building an expert team in the modern genomics industry is challenging



DNAWave Solutions

Our solutions streamlines and automates the entire genomics workflow, providing secure, scalable, and future-proof insights for personalized medicine.

DNAWave Genomics Solutions

- Customized Scalable Omics Stores
- Scalable Genomics Pipelines
- Customized Cohort Builder
- Omics Data Governance
- Clinogenomics AI Chatbot
- Clinogenomics OMOP MAP DataVault

Comprehensive Multi-Omics Analysis: DNA, RNA, and Proteomics

- **DNA Analysis:** *Comprehensive Variant Detection:* Utilize advanced techniques for detecting single nucleotide variants (SNVs), insertions, deletions, and structural variants. Ensure high accuracy with robust filtering and quality control measures

- **RNA Analysis**: *Transcriptome Profiling*: Perform differential expression analysis to identify key regulatory genes and pathways. Incorporate RNA-seq data for insights into gene expression patterns and alternative splicing events

- **Quantitative Proteomics**: Employ high-resolution mass spectrometry for in-depth protein quantification and post-translational modification analysis. Utilize scalable pipeline for robust and reproducible proteomics workflows

- **Holistic Insights**: Combine DNA, RNA, and Proteomics data for a comprehensive understanding of biological systems. Enable precision medicine applications through integrated omics data analysis

Precision Medicine: Accelerate the identification of genetic variants & Secondary Analysis

- **Accelerate** the identification of genetic variants in large-scale genomics projects, enhancing precision medicine initiatives.
- **Benefits**
  - Data Delivery Guarantee via Scalable Genomics Pipelines & Stores
  - GATK Fast, Scalable & Efficient processing
  - High accuracy, and Reliable variant detection
  - Scalable cloud-based HIPAA-compliance solution
  - Variant Effect Predictor with versioning and re-annotations
  - End-to-end data quality checks: avoid expensive re-processing
- **Platforms and tools**
  - GATK, DeepVariant, VarDict, Samtools, BCFtools etc

Key features: Focus on Quality

Optimized Data Processing & Advanced Quality Control

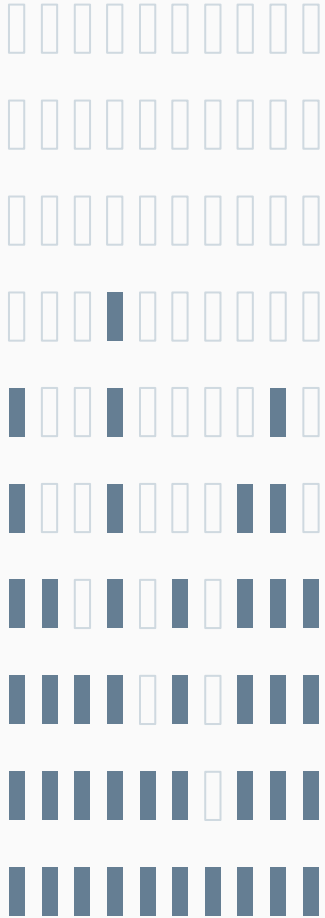
- **Advanced Monitoring & Error Management:** Integrate comprehensive error-checking and logging mechanisms across all workflows to ensure data integrity and reliability
- **Sequencing Metrics:** Continuously monitor sequencing quality, including Phred scores, to maintain the highest standards of data accuracy
- **Contamination Checks:** Implement rigorous checks to detect and prevent contamination, ensuring the purity and precision of your samples

Enhanced Variant Calling and Annotation

- **Ensemble Methods:** Leverage state-of-the-art ensemble approaches for variant calling, combined with stringent filtering criteria for the most accurate results
- **Database Updates:** Keep variant annotation databases up-to-date to reflect the latest research and insights

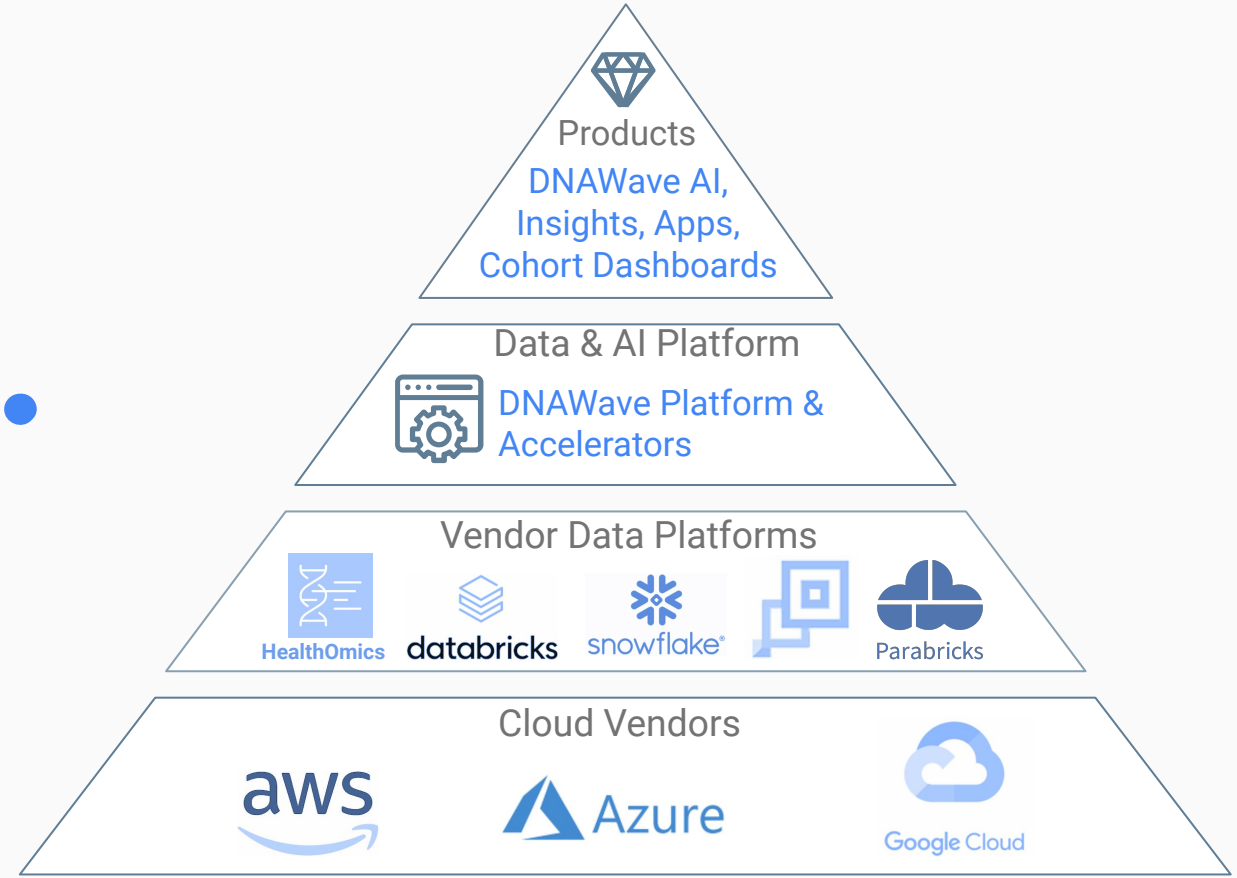
Commitment to Continuous Improvement

- **Benchmarking:** Regularly benchmark and validate pipelines against industry standards to maintain cutting-edge performance.
- **Best Practices:** Stay at the forefront of genomics by adopting and implementing evolving best practices



DNAWave Stack & Platform

DNAWave



Omics Data Governance & Data Contract Management

- Manage Clinical & Omics data as asset
- Guaranteed data delivery by data contract (SLA)
- PHI & HIPAA-based data Tokenization
- Secure Sharing through Health industry marketplace
    - Datavant Sharing
    - Snowflake Sharing
    - Databricks Delta Sharing

Omics Cohort Builder

- Provide researchers with dynamic, interactive dashboards to streamline cohort selection for epidemiological studies and personalized medicine.
- Benefits
  - Integrated Dashboard**:** Combine LIMS and Omics data for comprehensive analysis
  - Visualization**:** Intuitive dashboards for easy cohort selection and monitoring
  - Customization: Tailor dashboards to specific research needs and objectives
- BI platform
  - Web portal, PowerBI, Tableau, AWS QuickSight

Clinogenomics DataVault: Genomic Data Harmonization through the OMOP Standardized Vocabularies

- Genomic Data Harmonization through the Standardized Vocabularies based on Observational Medical Outcomes Partnership (OMOP) Common Data Model (CDM)
- Clinogenomics Data Vault data warehouse
- Benefits
  - Scalable Comprehensive Storage: Centralize diverse healthcare data source
  - Data following industry OMOP CDM standard and Genomics extension
  - Facilitate seamless data integration and analysis including Cohort Builder
  - HIPAA-compliance with data protection regulations

Partnership options

- **Integrate Seamlessly with Your In-House Team:** Function as an extension of your engineering team, aligning with your processes and culture.
- **End-to-End Ownership & Delivery:** Take full responsibility for delivering defined scopes of work, from initial requirements to final implementation.
- **Optimize & Enhance Workloads:** Conduct thorough reviews and implement targeted improvements, addressing your specific challenges and incorporating feedback.


Q & A