GAIT ANALYSIS REPORT

Patient Information

Field	Value
Patient Name	Patient 1
Patient ID	501
Age	22 years
Gender	MALE
Height	165 cm
Weight	60 kg
Doctor	Dr. Alice
Contact	0781111100

Session ID: 1

Metric	Value
Total Distance	22.0 meters
Number of Strides	14
Average Stride Length	1.57 meters
Session Duration	21.2 seconds
Analysis Method	ZUPT Method
Confidence Level	medium

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Powered by Advanced Gait Analysis System

EXECUTIVE SUMMARY

This gait analysis was performed for Patient 1, a 22-year-old male patient under the care of Dr. Alice.

This gait analysis session covered a total distance of 22.0 meters over 21.2 seconds. The analysis identified 14 complete strides with an average stride length of 1.57 meters. The analysis was performed using the ZUPT Method approach, which provided medium confidence in the results.

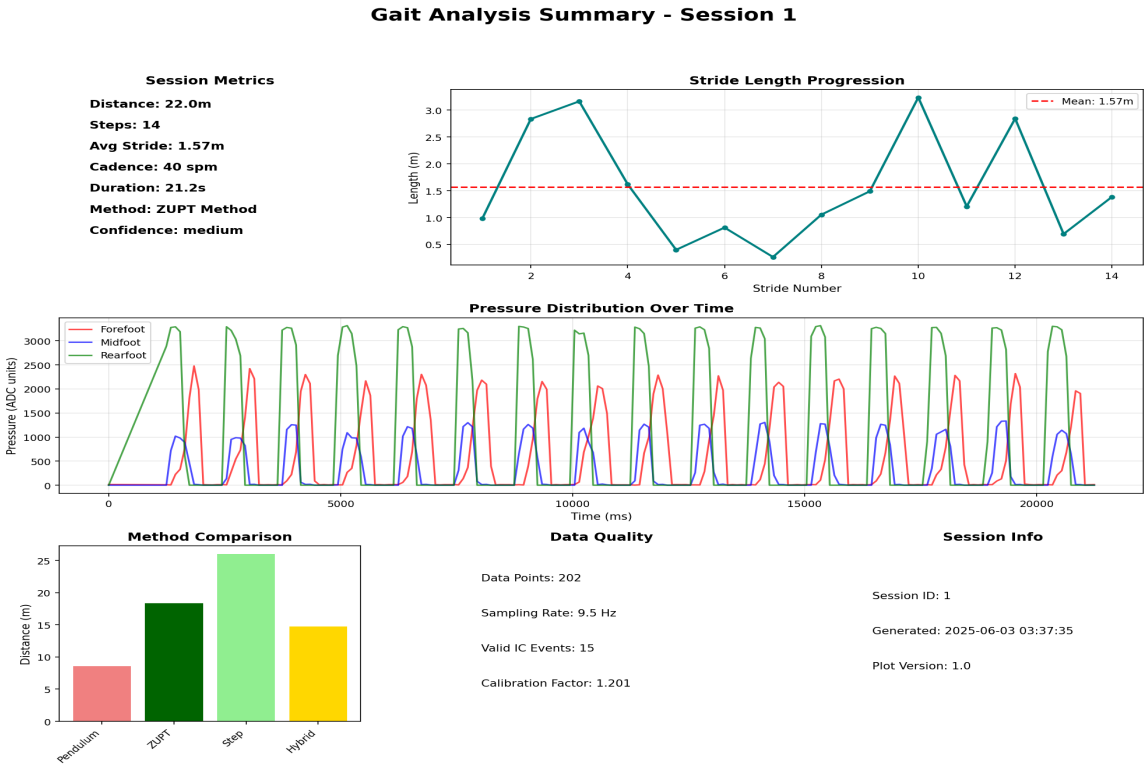
Key Findings:

- Average walking speed: 3.7 km/h
- Stride length variability (CV): 63.0%
- Dominant foot pattern detected
- Data quality: 202 sensor readings processed

DETAILED ANALYSIS

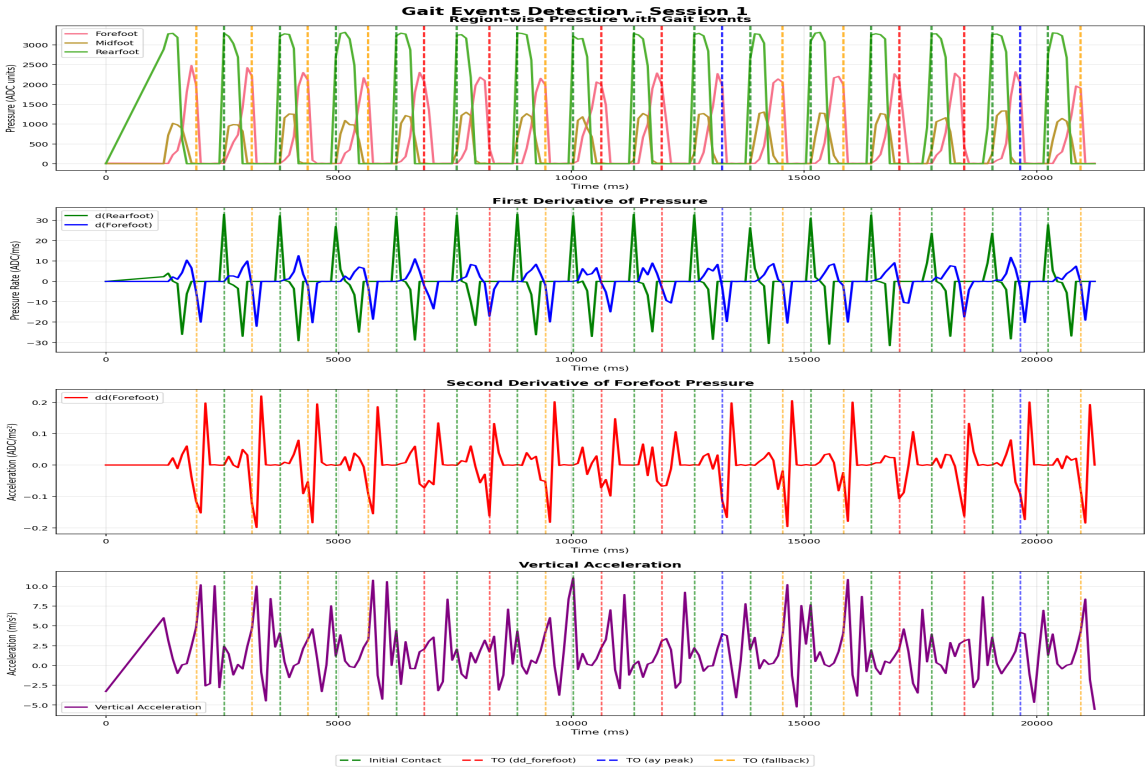
Session Overview

Comprehensive overview of all key metrics and trends from the gait analysis session.



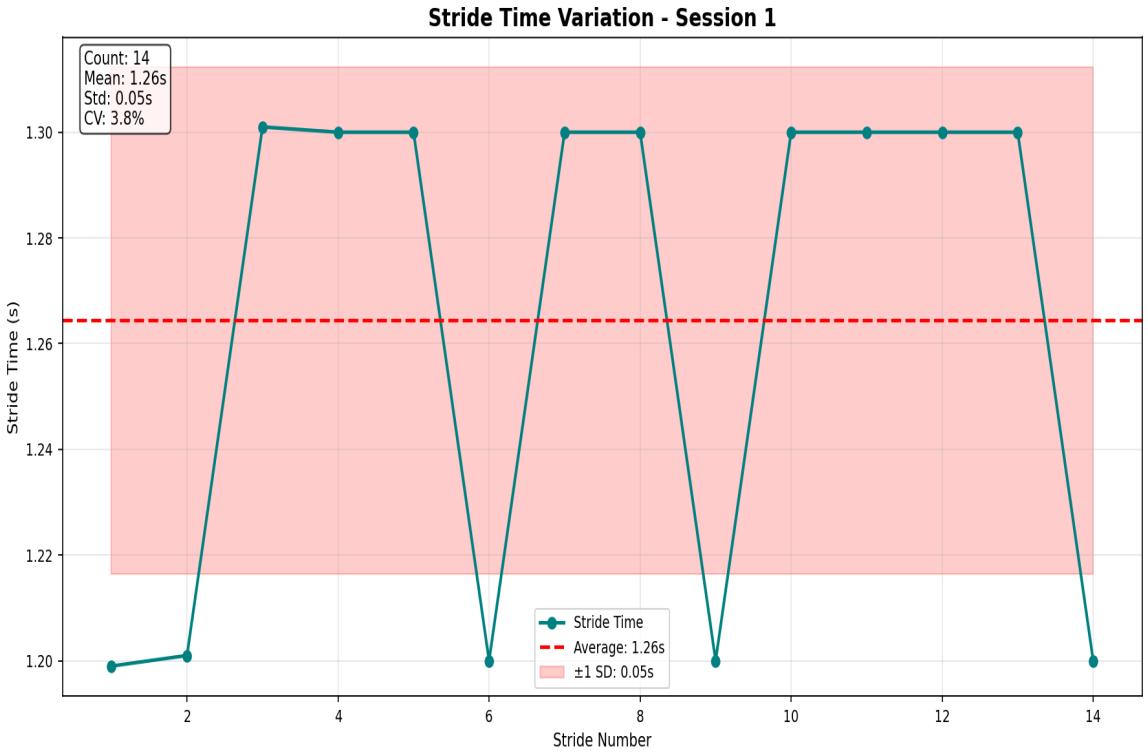
Gait Event Detection

Detailed view of initial contact and toe-off detection across different sensor signals.



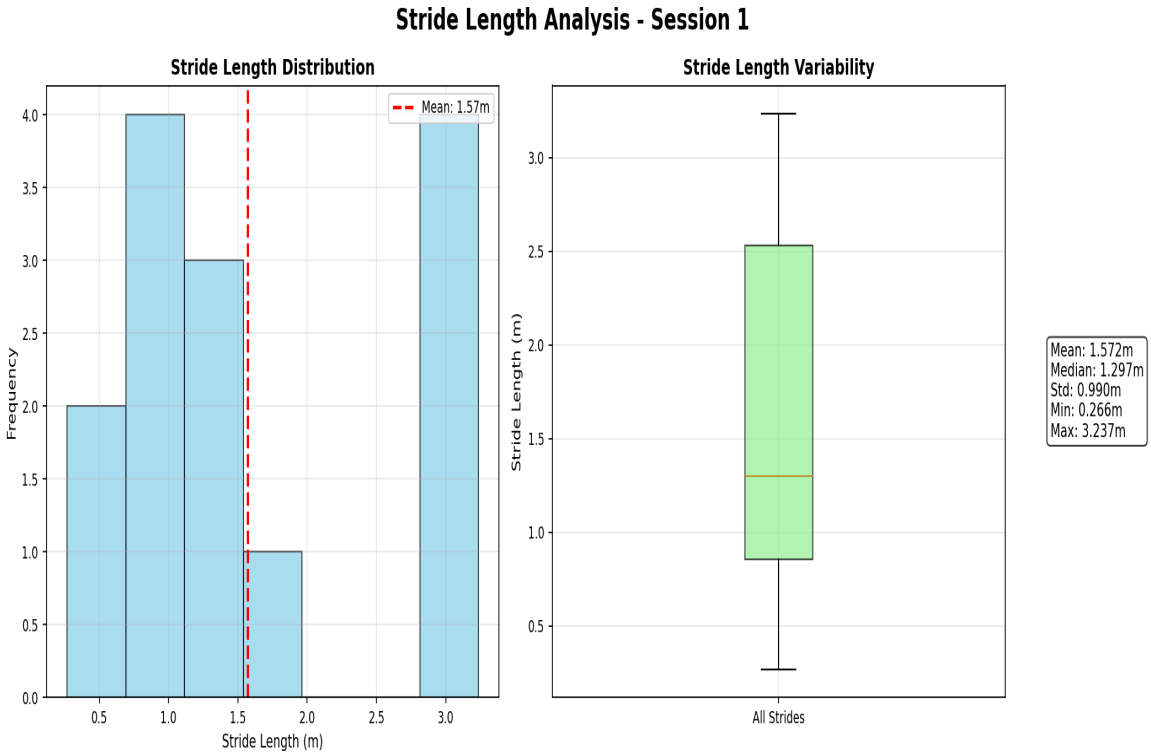
Stride Time Analysis

Temporal analysis showing stride-to-stride timing variability and consistency.



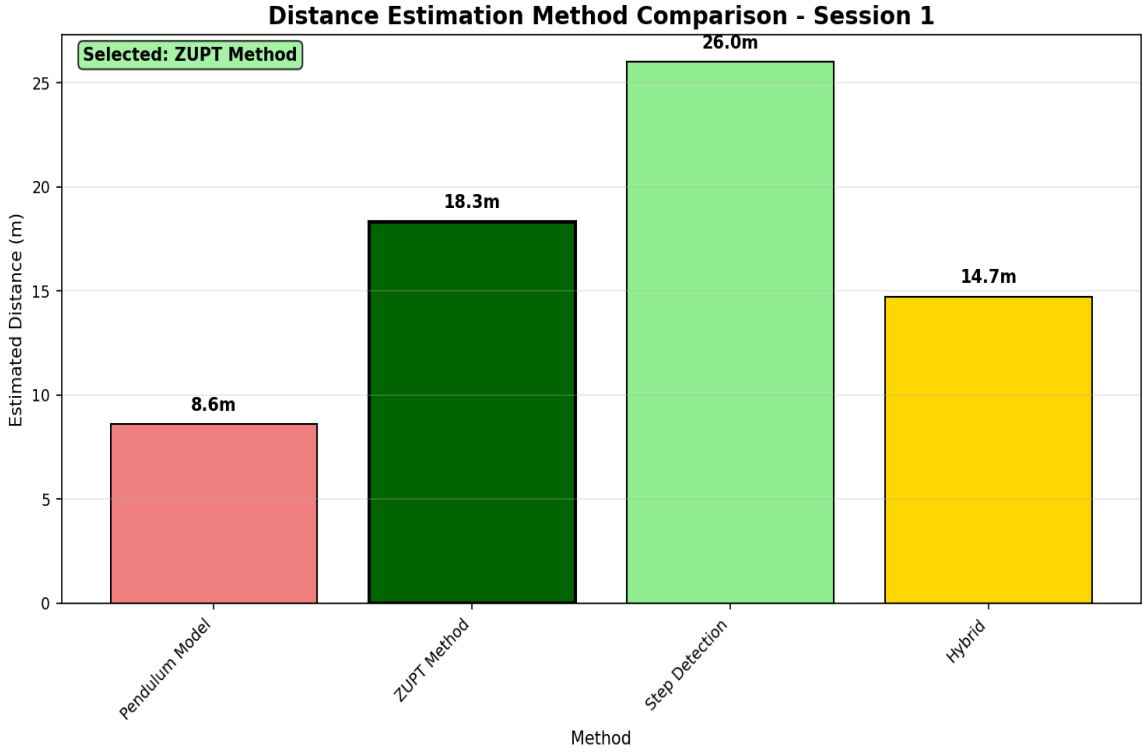
Stride Length Distribution

Statistical distribution of stride lengths with variability metrics.



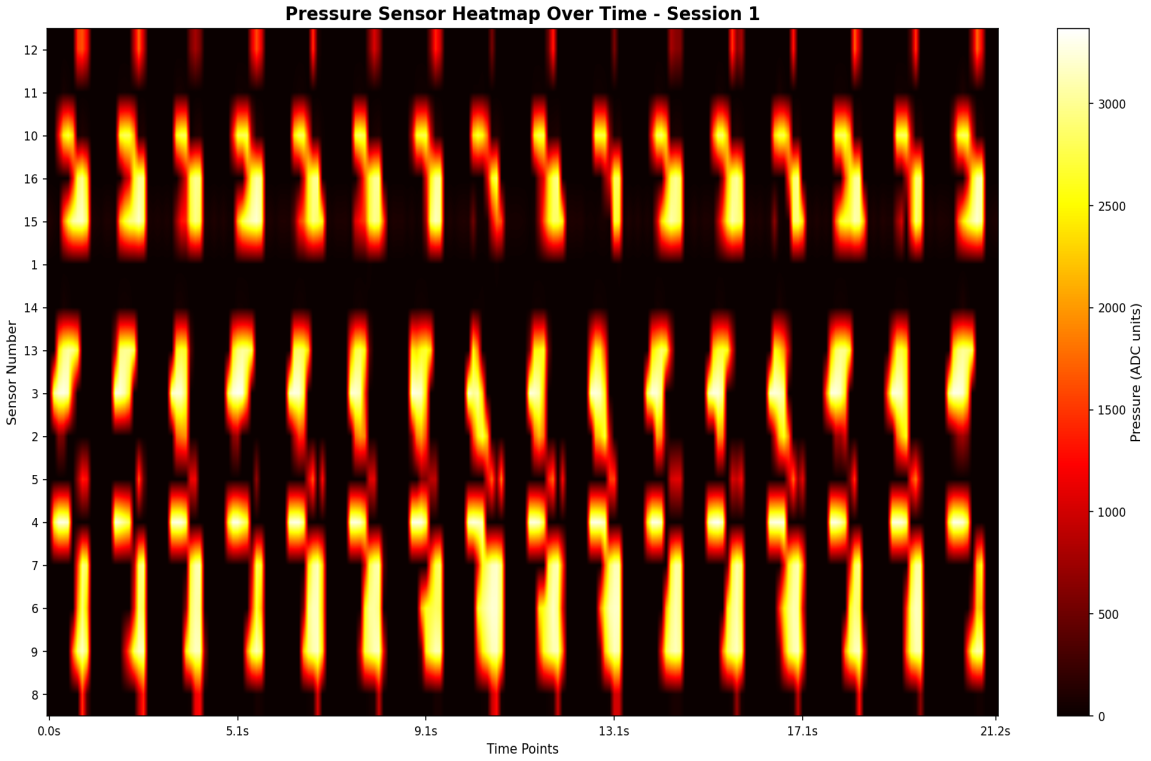
Method Comparison

Comparison of different distance estimation methods used in the analysis.



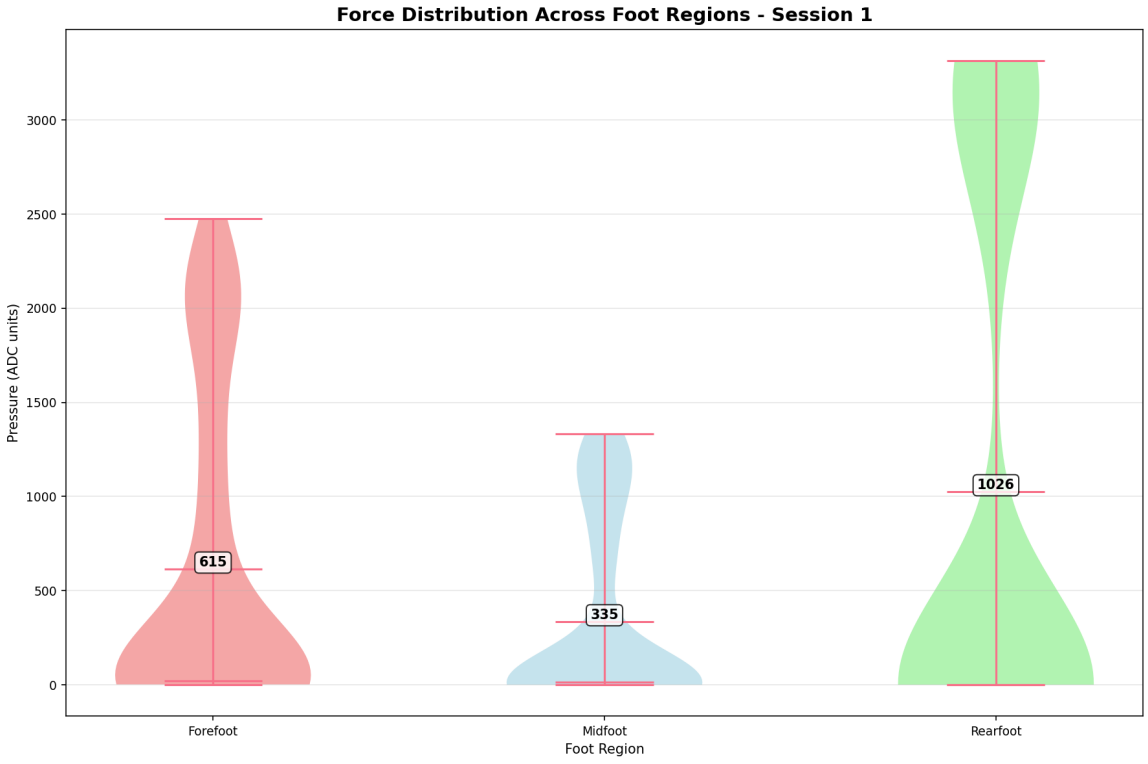
Pressure Distribution

Spatial and temporal pressure distribution across all foot sensors.



Force Analysis

Distribution of forces across different regions of the foot during walking.



METHODOLOGY & DATA QUALITY

Analysis Method

This analysis used the ZUPT Method approach for stride length estimation. The method was selected based on data quality metrics and confidence scores across multiple algorithmic approaches.

Data Quality Metrics

Metric	Value
Total Data Points	202
Sampling Rate	9.5 Hz
Valid Initial Contacts	15
Calibration Factor	1.201
Analysis Confidence	medium

Algorithm Details

The gait analysis system employs multiple complementary algorithms: • ZUPT (Zero Velocity Update) Method: Uses inertial sensor data to detect stationary phases • Step Detection Algorithm: Identifies discrete footstep events from pressure sensors • Pendulum Model: Biomechanical model based on leg swing dynamics • Hybrid Approach: Combines multiple methods for optimal accuracy The system automatically selects the most appropriate method based on signal quality and consistency metrics.

APPENDIX

Technical Specifications

Component	Specification
Pressure Sensors	16-channel FSR array
IMU Sensors	3-axis accelerometer, gyroscope
Sampling Rate	9.5 Hz
Processing Algorithm	Real-time gait event detection
Calibration	Multi-method validation approach

Raw Data Summary

Total sensor readings: 202 Duration: 21.2 seconds Active sensors: 16 Data completeness: 100.0%

Disclaimer

This report is generated by an automated gait analysis system for research and clinical assessment purposes. Results should be interpreted by qualified professionals in conjunction with clinical examination and other diagnostic methods.