Software Requirements

Data Collection and Processing  
Blizzard API

* Utilize the Blizzard API for accessing SC2 game data.

##### Apache Kafka

* Use this to collect data from user clients and distribute information to user clients.

##### Apache Spark\*

* This framework is suitable for big data processing and analysis.

Machine Learning and Data Analytics

This software is not necessary for the current iteration of the application. May be useful for additional functionalities in the future.  
PyTorch\*

* Implement machine learning algorithms for predictive analytics, such as predicting match outcomes, player performance, etc.

##### NumPy

* Essential for data manipulation and numerical computations in Python.

Backend Development  
Django

* a high-level Python web framework that encourages rapid development.

##### PostgreSQL Database

* For storing player profiles, match histories, and analytics results.

Frontend Development  
React

* Used for building dynamic and responsive user interfaces.

##### D3.js\*

* For data visualization, particularly important for displaying analytics and statistics in an understandable way.

Cloud Services  
AWS\*

* For hosting the application and data storage.

Containerization and Orchestration  
Docker

* Use for containerizing the application and managing its deployment, scaling, and operation across multiple environments.

Kubernetes\*

* Use for orchestration, manage the Docker containers that make up the application

Security  
OAuth\*

* Implement secure authentication mechanisms for user accounts.  
  SSL/TLS for Secure Communication: Ensure all data transmission is encrypted.

## Testing and Quality Assurance

##### Jest\*

* Automated testing for React.

##### PyTest\*

* Automated testing for Django.

## Monitoring and Logging

##### Datadog\*

* Provides real-time metrics and performance insights.

\*Can be added later in the development cycle