
SOFTWARE REQUIREMENTS SPECIFICATION

for

CS 4ZP6 Capstone Project

Version 0.0

Prepared by Brendan Duke, Andrew Kohnen,
Udip Patel, David Pitkanen, Jordan Viveiros

McMaster Text to Motion Database

October 10, 2016

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Revision History

Name	Date	Reason For Changes	Version
Brendan Duke	Oct. 7th, 2016	Initial Version	0.0

1 Project Drivers

1.1 The Purpose of the Project

1.1.1 The User Business or Background of the Project Effort

1.1.2 Goals of the Project

1.2 The Client, the Customer, and Other Stakeholders

1.2.1 The Client

1.2.2 The Customer

1.2.3 Other Stakeholders

1.3 Users of the Product

1.3.1 The Hands-on Users of the Product

1.3.2 Priorities Assigned to Users

1.3.3 User Participation

1.3.4 Maintenance Users and Service Technicians

2 Project Constraints

2.1 Mandated Constraints

2.1.1 Solution Constraints

Requirement Number	0
Requirement Type	4a. Solution Constraint
Event/Use Case Numbers	Entire product.
Description	The Text-to-Motion Software Suite must run under Linux.
Rationale	Linux is the operating system used by the Guelph Machine Learning research lab, and also the most commonly used operating system in the research community.
Originator	Dr. Graham Taylor
Fit Criterion	Automated builds and testing should pass on popular Linux distributions: Ubuntu, Fedora and RHEL.
Customer Satisfaction	5
Customer Dissatisfaction	5
Priority	High priority.
Conflicts	None.
Supporting Materials	None.
History	Created September 26th, 2016.

Requirement Number	1
Requirement Type	4a. Solution Constraint
Event/Use Case Numbers	Entire product.
Description	Major APIs to the Text-to-Motion database must be accessible from the Python programming language.
Rationale	Python is a popular, easy-to-use, and quick-to-prototype language, and is therefore one of the most favoured programming languages among the Machine Learning research community.
Originator	Dr. Graham Taylor
Fit Criterion	There must be hooks to all major interfaces written in Python, and there must be tests that are directly testing the Python interfaces.
Customer Satisfaction	5
Customer Dissatisfaction	5
Priority	High priority.
Conflicts	None.
Supporting Materials	None.
History	Created September 26th, 2016.

2.1.2 Implementation Environment of the Current System

2.1.3 Partner or Collaborative Applications

2.1.4 Off-the-Shelf Software

2.1.5 Anticipated Workplace Environment

2.1.6 Schedule Constraints

2.1.7 Budget Constraints

2.2 Naming Conventions and Definitions

2.2.1 Definitions of All Terms, Including Acronyms, Used in the Project

2.2.2 Data Dictionary for any Included Models

2.3 Relevant Facts and Assumptions

2.3.1 Facts

2.3.2 Assumptions

3 Functional Requirements

3.1 The Scope of the Work

3.1.1 The Current Situation

3.1.2 The Context of the Work

3.1.3 Work Partitioning

3.2 The Scope of the Product

3.2.1 Product Boundary

3.2.2 Product Use-case List

3.2.3 Individual Product Use Cases

3.3 Functional and Data Requirements

3.3.1 Functional Requirements

Requirement Number	2
Requirement Type	9a. Functional Requirement
Event/Use Case Numbers	
Description	The text-to-motion software suite will provide an API to read individual frames in RGB format from a video stream. At least MP4, MP2 and AAC must be supported.
Rationale	Researchers may wish to do their own processing on RGB frames before feeding those frames into the human pose estimation module.
Originator	Brendan Duke.
Fit Criterion	For a given set of test video streams, the frame-capture API must produce RGB frames identical to known reference frames.
Customer Satisfaction	3
Customer Dissatisfaction	3
Priority	Moderate priority.
Conflicts	None.
Supporting Materials	None.
History	Created October 5th, 2016.

3.3.2 Data Requirements

4 Nonfunctional Requirements

4.1 Look and Feel Requirements

4.1.1 Appearance Requirements

4.1.2 Style Requirements

4.2 Usability and Humanity Requirements

4.2.1 Ease of Use Requirements

4.2.2 Personalization and Internationalization Requirements

4.2.3 Learning Requirements

4.2.4 Understandability and Politeness Requirements

4.2.5 Accessibility Requirements

4.3 Performance Requirements

4.3.1 Speed and Latency Requirements

4.3.2 Safety-Critical Requirements

4.3.3 Precision or Accuracy Requirements

4.3.4 Reliability and Availability Requirements

4.3.5 Robustness or Fault-Tolerance Requirements

4.3.6 Capacity Requirements

4.3.7 Scaling of Extensibility Requirements

4.3.8 Longevity Requirements

4.4 Operational and Environmental Requirements

4.4.1 Expected Physical Environment

4.4.2 Requirements for Interfacing with Adjacent Systems

4.4.3 Productization Requirements

4.4.4 Release Requirements

4.5 Maintainability and Support Requirements

4.5.1 Maintenance Requirements

4.5.2 Supportability Requirements

4.5.3 Adaptability Requirements

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4.6 Security Requirements

4.6.1 Access Requirements

4.6.2 Integrity Requirements

4.6.3 Privacy Requirements

4.6.4 Audit Requirements

5 Project Issues

5.1 Open Issues

5.2 Off-the-Shelf Solutions

5.2.1 Ready-Made Products

5.2.2 Reusable Components

5.2.3 Products That Can Be Copied

5.3 New Problems

5.3.1 Effects on the Current Environment

5.3.2 Effects on the Installed Systems

5.3.3 Potential User Problems

5.3.4 Limitations in the Anticipated Implementation Environment That May Inhibit the New Product

5.3.5 Follow-Up Problems

5.4 Tasks

5.4.1 Project Planning

5.4.2 Planning of the Development Phases

5.5 Migration to the New Product

5.5.1 Requirements for Migration of the New Product

5.5.2 Data That Has to Be Modified or Translated for the New System

5.6 Risks

5.7 Costs

5.8 User Documentation and Training

5.8.1 User Documentation Requirements

5.8.2 Training Requirements

5.9 Waiting Room

5.10 Ideas for Solutions

6 Appendix

6.1 Appendix A: Glossary

6.2 Appendix B: Analysis Models

6.3 Appendix C: To Be Determined List