

The Novel MIDI Controller

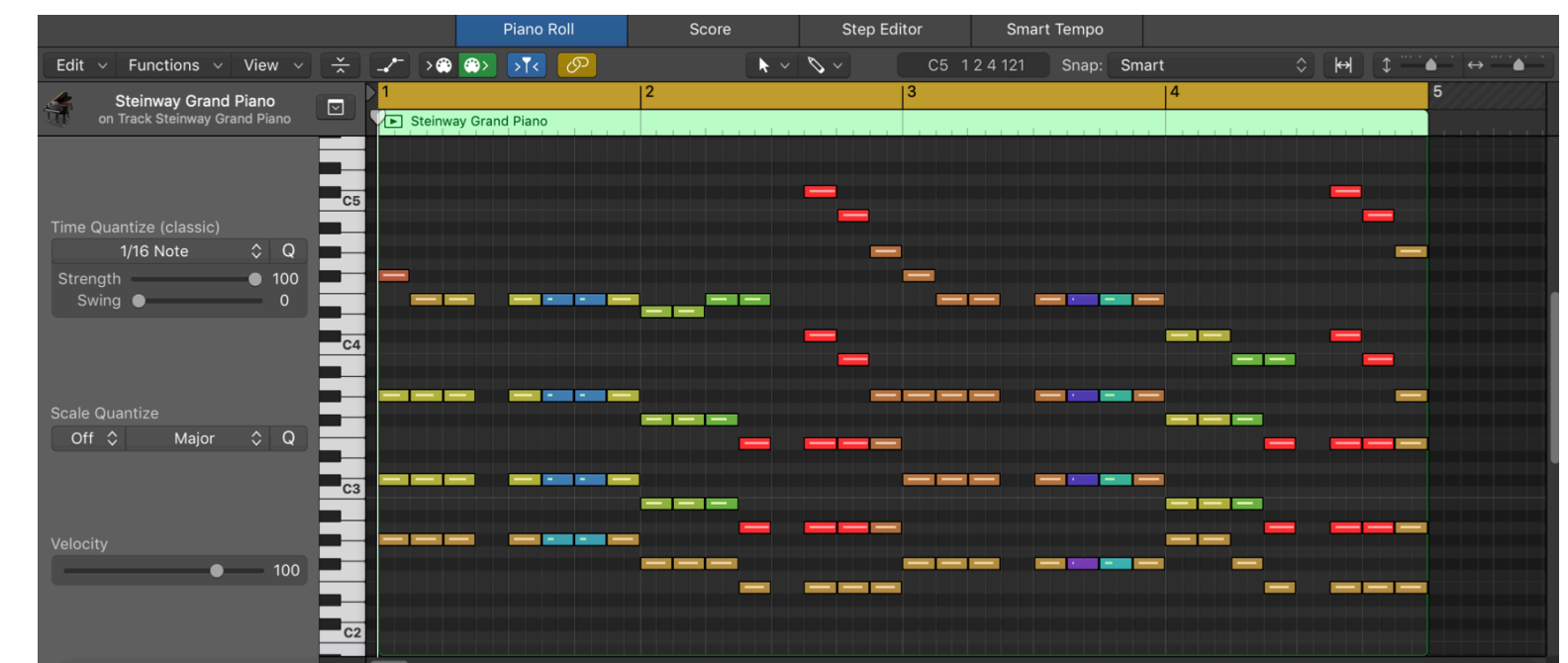
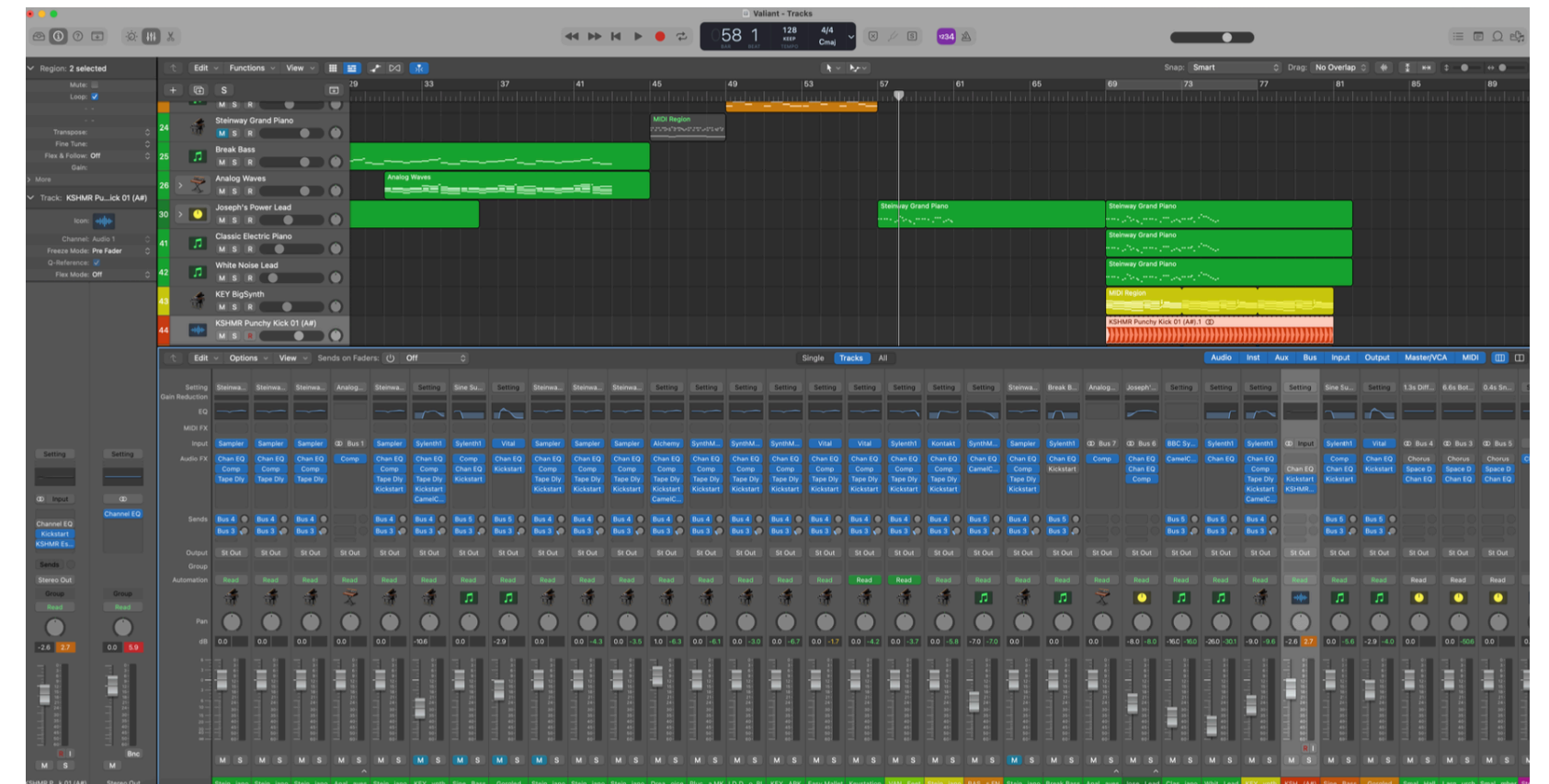
Designing & Implementing a User-Centred MIDI Controller

Joseph Cameron - 19/08/2022

Understanding the Problem Space

Motivation

- Traditional MIDI Controllers are targeted at musicians and music theory experts.
- Music composition & production tools can be intimidating.

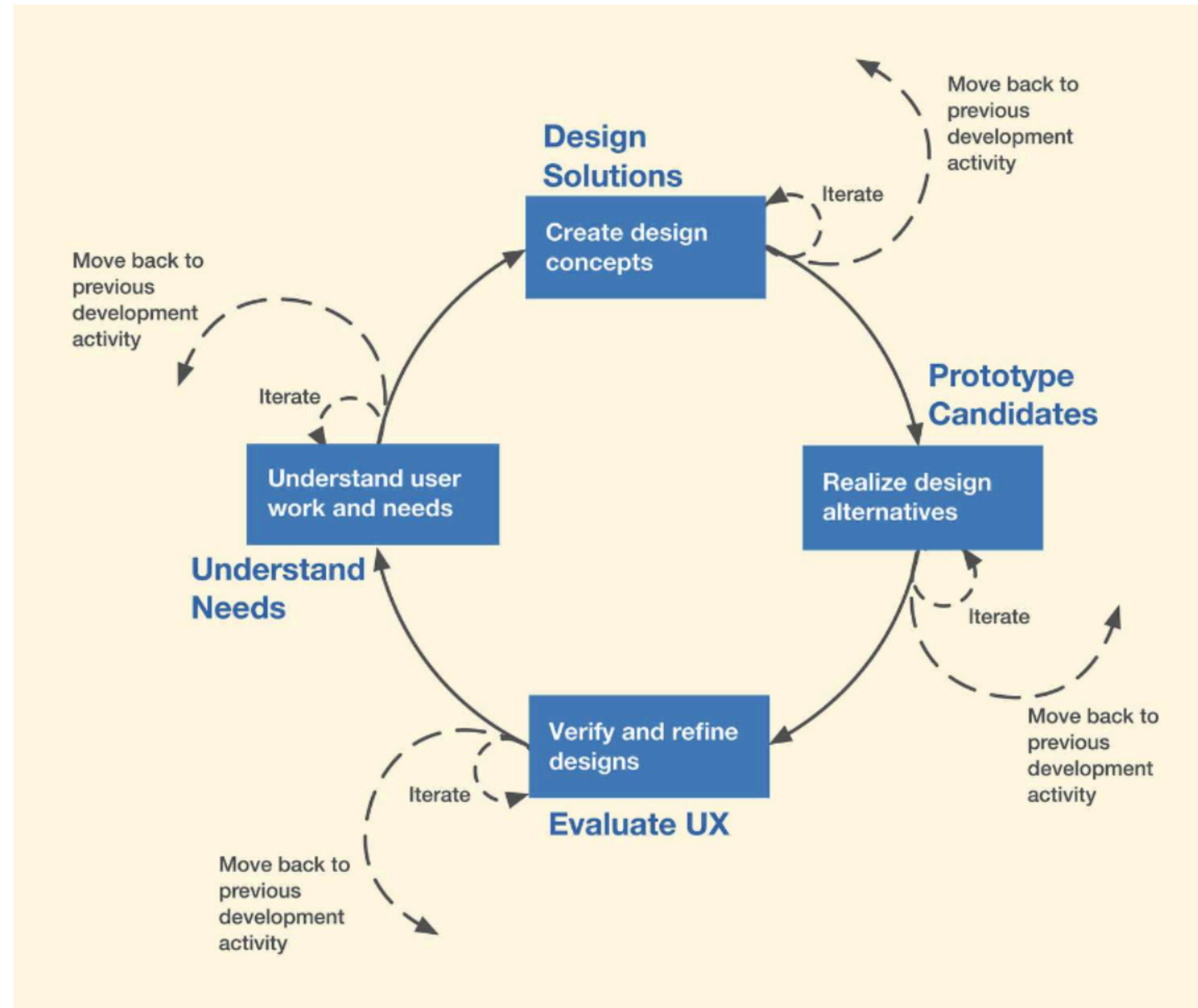


The User-Centred Design Process

The Steps for Building the Novel MIDI Controller

Step 1: Understand User Needs through Semi-Structured Interviews & Observation Studies

Step 4: Evaluated the MIDI Controller through Observation Studies, Semi-Structured Interviews, & Questionnaires



Step 2: Design Solutions through Scenario & Concept Sketching

Step 3: Implement the Novel MIDI Controller Application with Processing and Leap Motion API

The Novel MIDI Controller Demo

Live Mode

MAIN MENU

G# MINOR

NOTES

CHORDS

PITCH BEND

Selected Key: G# Minor

Characteristics of G# Minor: Grumbling, Moaning, and Laborious

F#3 Major	F#4 Major
E3 Major	E4 Major
D#3 Minor	D#4 Minor
C#3 Minor	C#4 Minor
B2 Major	B3 Major
A#2 Diminished	A#3 Diminished
G#2 Minor	G#3 Minor

Editor Mode

MAIN MENU

EXPORT MIDI

LOAD MIDI

C# MINOR

NOTES

CHORDS

PITCH BEND

COMPOSE

DELETE

EDIT

128.00

TEMPO (BPM)

C#5

B4

A4

G#4

F#4

E4

D#4

C#4

B3

A3

G#3

F#3

E3

D#3

C#3

C#5

B4

G#4

F#4

E4

D#4

C#4

B3

A3

G#3

F#3

E3

D#3

C#3

C#4 Min

B3 Maj

A3 Maj

G#3 Min

F#3 Min

E3 Maj

D#3 Dim

C#3 Min

B2 Maj

A2 Maj

G#2 Min

F#2 Min

E2 Maj

D#2 Dim

C#2 Min

C#3 Min

B2 Maj

A2 Maj

G#2 Min

F#2 Min

E2 Maj

D#2 Dim

C#2 Min

▶

Space Bar = Play