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Expanding the functionalities of VREX

Bachelor's Thesis (9 ECTS)

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Expanding the functionalities of VREX

Abstract:

Conducting psychological experiments in the real world has limitations like cost, real world physics, lack of control and many more. Current technologies give us all the needed tools to create virtual environments that are free of these limitations and VREX is a toolbox that tries to use these advantages of technology. During this thesis VREX was reworked and made into a toolbox that is distributed as a Unity project which has all the essential blocks to create new experiments. Functionalities like new locomotion systems and the possibility to use audio files in experiments have been added. Editor view has been reworked and improved and code has been commented to ease the creation of new custom experiments. In addition to well explained code a blank experiment was created that has all the essential building blocks that any of experiments need so that users can build their own experiments onto that example.

Keywords:

Virtual reality, Unity, psychology, toolbox

CERCS: P175

Tööriistakasti VREX edasi arendus

Lühikokkuvõte:

Psühholoogiliste eksperimentide läbiviimine päris maailmas on piiratud hinna, füüsikaseaduste, kontrolli vähesuse jms tõttu. Tänapäeva tehnoloogia annab meile kõik vajalikud tööriistad, et luua keskkondi virtuaalses reaalsuses, mis on vaba nendest piirajatest. VREX on tööristakast, mis üritab kasutada uusi tehnoloogiaid. Käesoleva töö käigus muudeti algul eraldiseisva programmina olnud VREX Unity tööriistakastiks, millel on kaasas kõik vajalikud klotsid, et luua uusi psühholoogilisi eksperimente. VREX'i lisati mitu uut vajalikku funktsionaalsust. Lisati meetodeid katseisiku liikumiseks, audio failide tugi, muudeti 3D-redigeerimise aken ja kood oli paremini dokumenteeritud, et uute eksperimentide loomine oleks lihtsam. Lisaks funktsionaalsustele loodi ka tühi näidiseksperiment, milles on kõik vajalik eksperimendi loomiseks juba olemas. Seda tühja näidist kasutades on kasutajal juba lihtsam uut eksperimenti luua.

Võtmesõnad:

Virtuaalne reaalsus, Unity, psühholoogia, tööriista kast

CERCS: P175

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