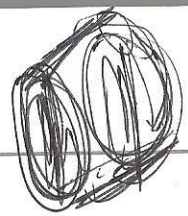
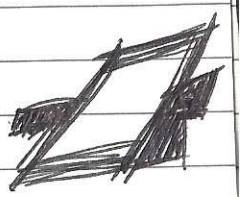
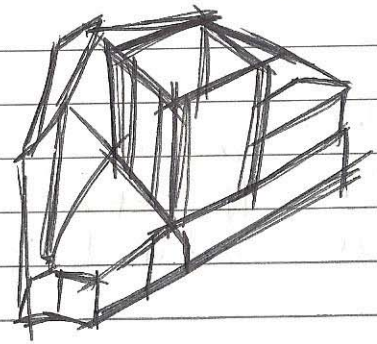
A'ZONE DESIGN



Matt April 1st Meeting

- GETTING DETERMEFFECTS.
- MEETING EVERYONE.





Year Change Ppp

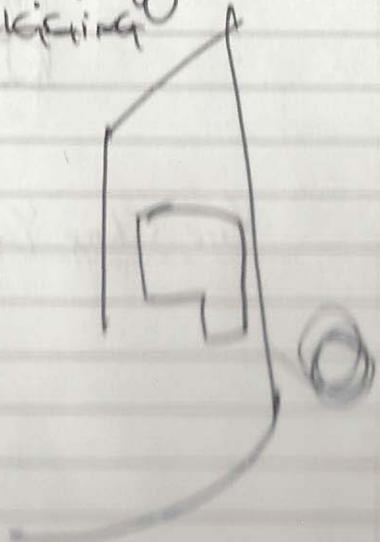
- Citibank -

- Bedok - SMRT Station

NOKIA PHONE

2:30 Screening of Clone Wars
4:00 Next Gen Topology
4:30 Lucasfilm Rigging

Shih Ming Tay



- Ask about controls on lightsaber
  - Strategy + setup

- Ask about control setup on arms - stretch on arm and switches

~~Fix the wrist~~

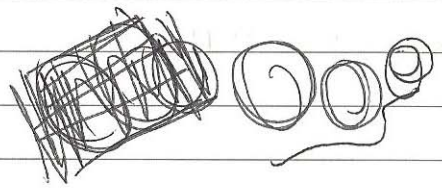
Strategy for hips

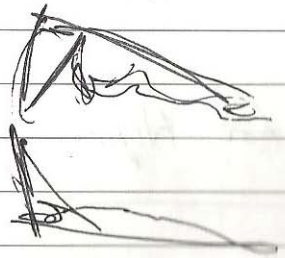
- Jar Jar ears setup

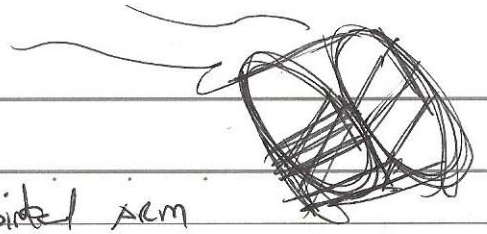
- Jar Jar Front Panel

- Ask about offset of Translate/Rotate o for Jar Jar

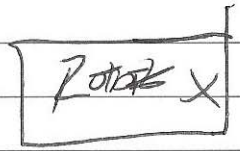
- check ik hierarchy and follow controls for moving along a path



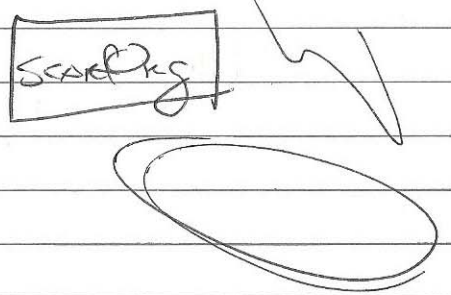


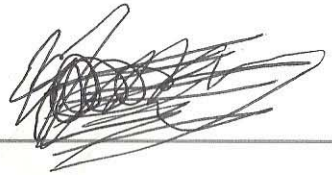


Double jointed arm



twist1 X twist2 X

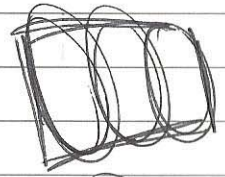


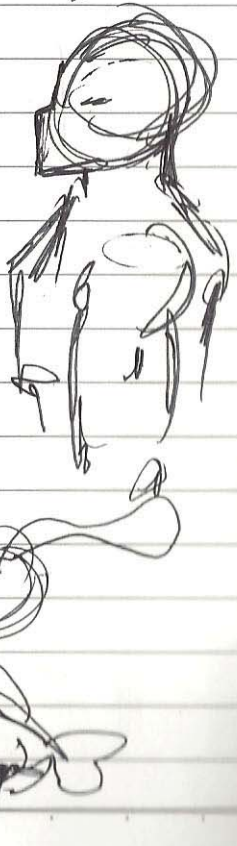


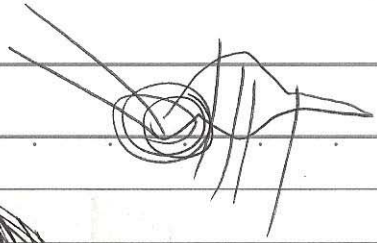
→ Sphere
- locator - collision object w/ body
- group
- control handle

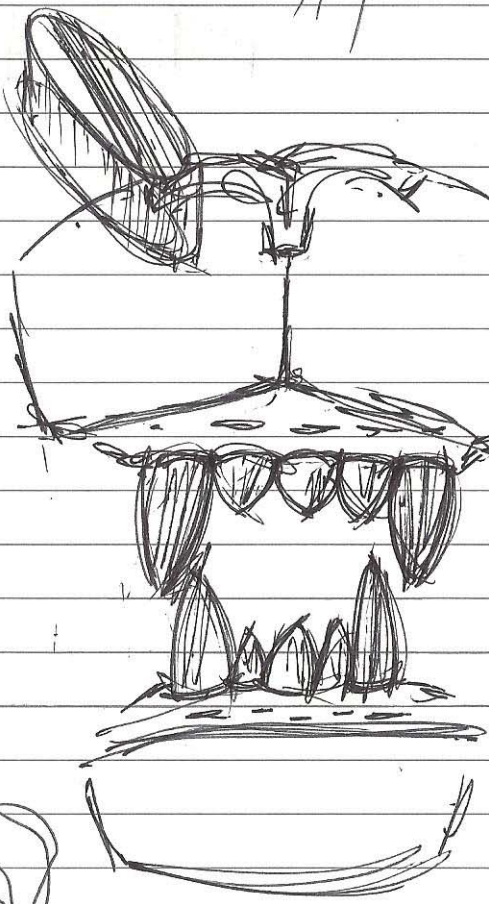
cluster - dynamic

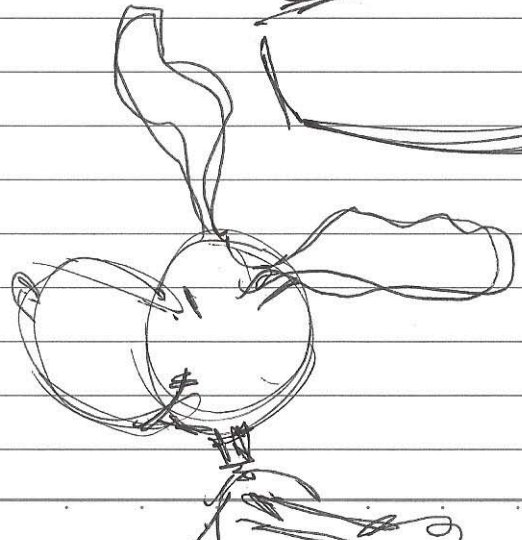
- rigid body

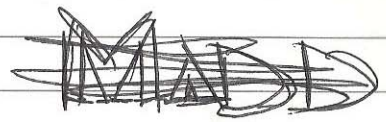


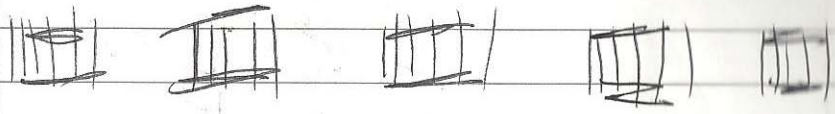


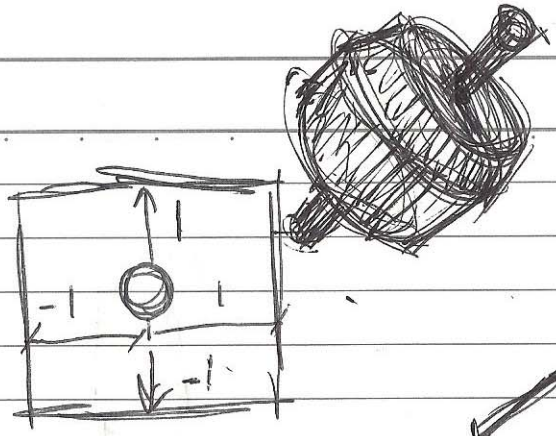




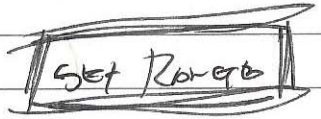


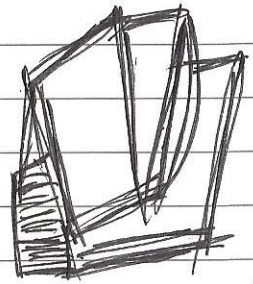


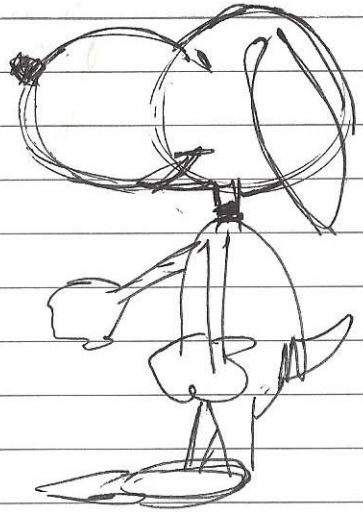


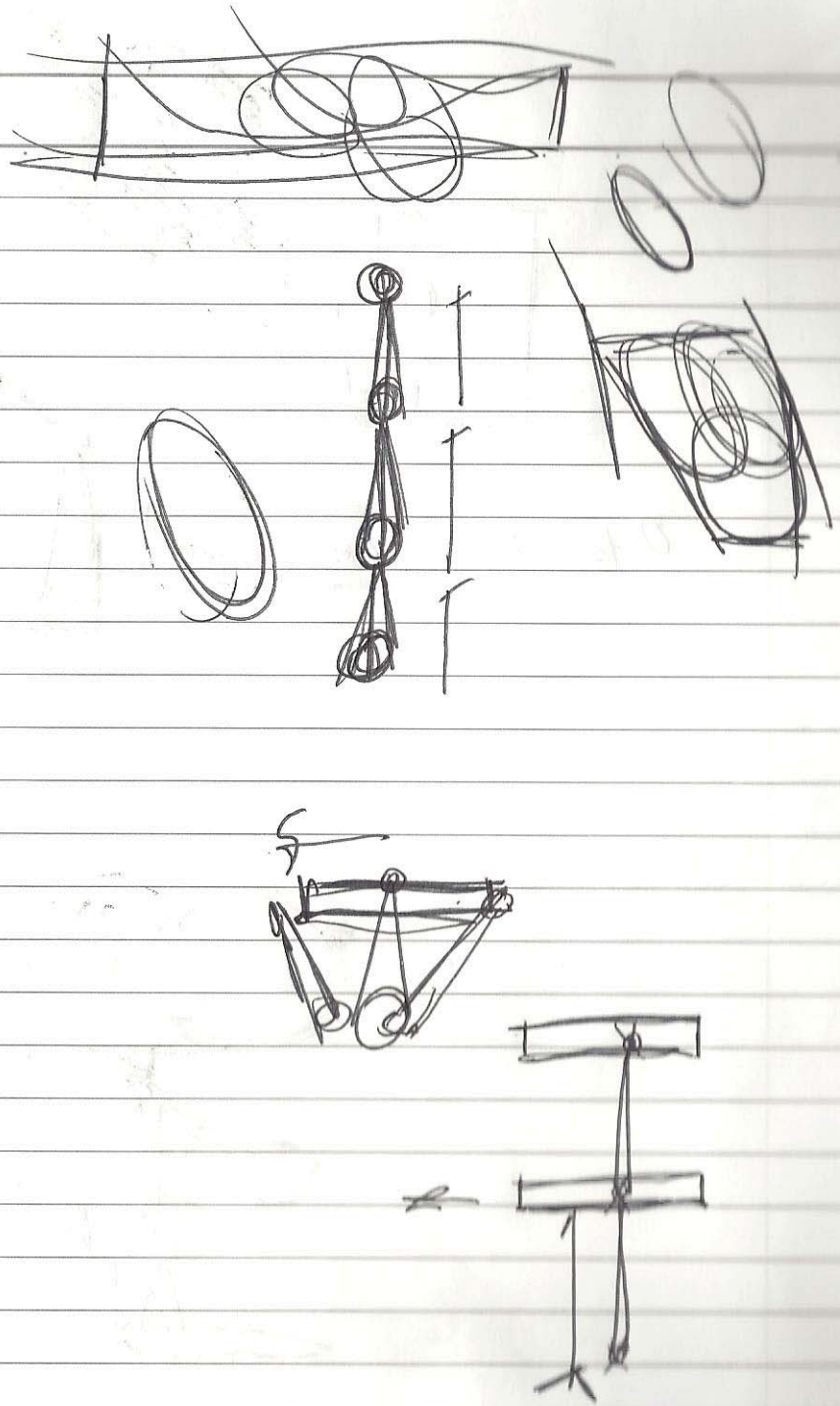


0 to -1







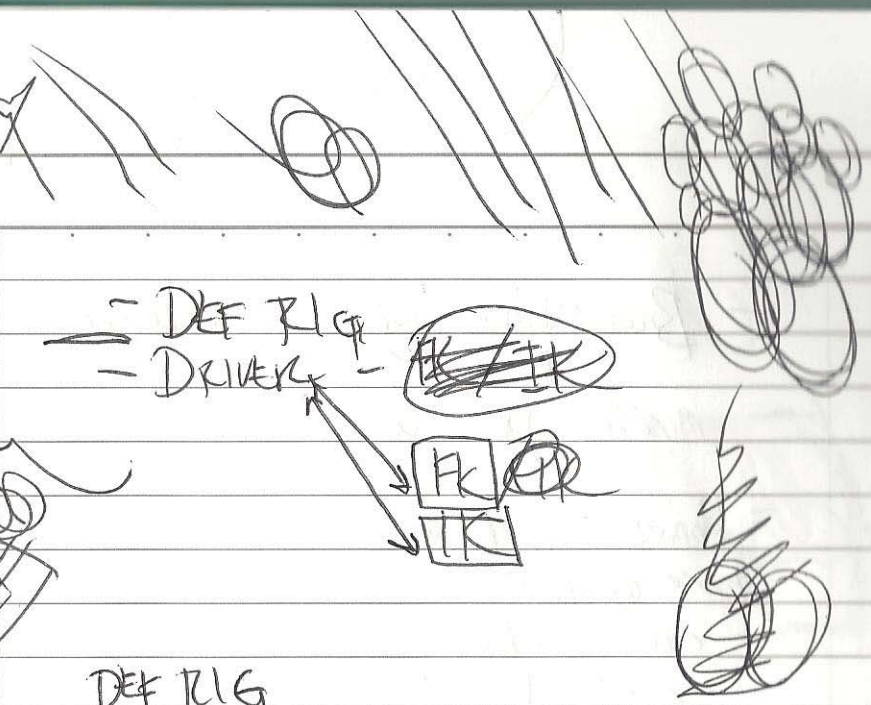


- Breathing, Layer on skeleton
  - muscle joints on chest

- Hamstring flex
- KNEE FLEX
- CALF BUCKLE
  - achilles heel

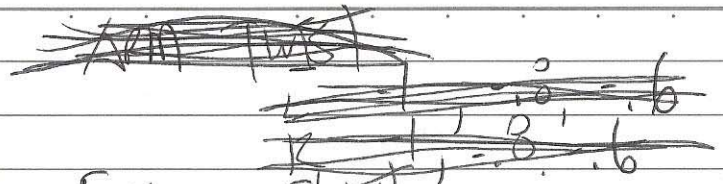
- Elbow flex (tennis)
- Forearm flex
  muscle tendon flexing & joints

- Scapula flex



DEF RIG
DRIVEN (CAP)
ANIM { FK / IK

DumHips → coreHips > parent constraint

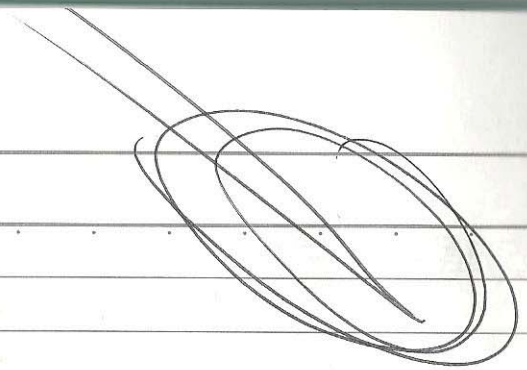


Forearm TWIST
- L .8 -.3
- R -.8, -.3

LEG TWIST
L -1
R -1

HAMSTRING
L - rotate, scale up
R - rotate, scale up

Calf Scale
L - scale out
R - scale out

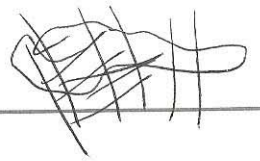


Left object RotationUp 2

RIGHT object RotationUp -1

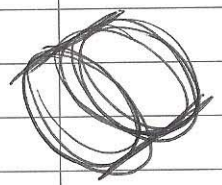
Rotate calf: -15 rotate Z

.7 scale X



HEAD +

Root, SPINE, Left leg control, Left Foot control



- ARM control
- pole vector

- Finger controls

-

- ~~ARM CONTROL~~
  - FK/IK BLEND
  - FINGER SPREAD
  - FIST
  - POLE VECTOR CONSTRAINT

WRIST ROTATE

~~GREEK~~

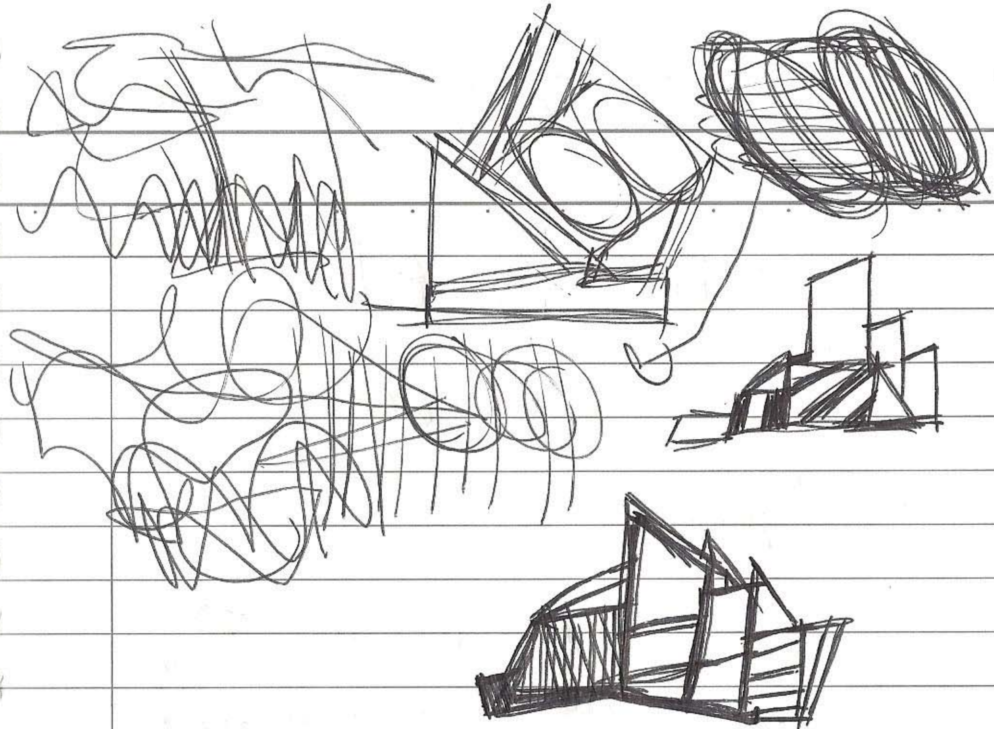
~~TREE~~ ① - Grap - bind to parent

- Grap - SDK

- Finger Control -

- HEAD -

AIM ROTATE



Rotate Arm 0-120

ELBOW ROTATE OUT

AND Scale

ROTATE ARM 0-120

FOREARM ROTATE up and out w/ scale

- 120-150 -

- 120-150 -

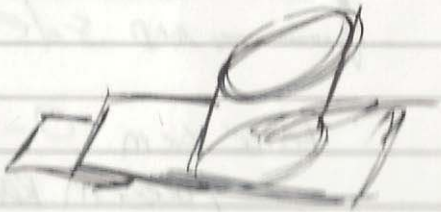
-Fist- 0, -85

50, 60

Finger Spread -

-20 -10 10 20

INDEX MIDDLE RING PINKY

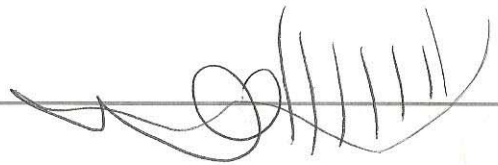


IK controls on FK SETUP

- ARMS
- legs

XYZ locx2

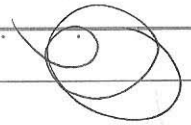
0 , 0-1



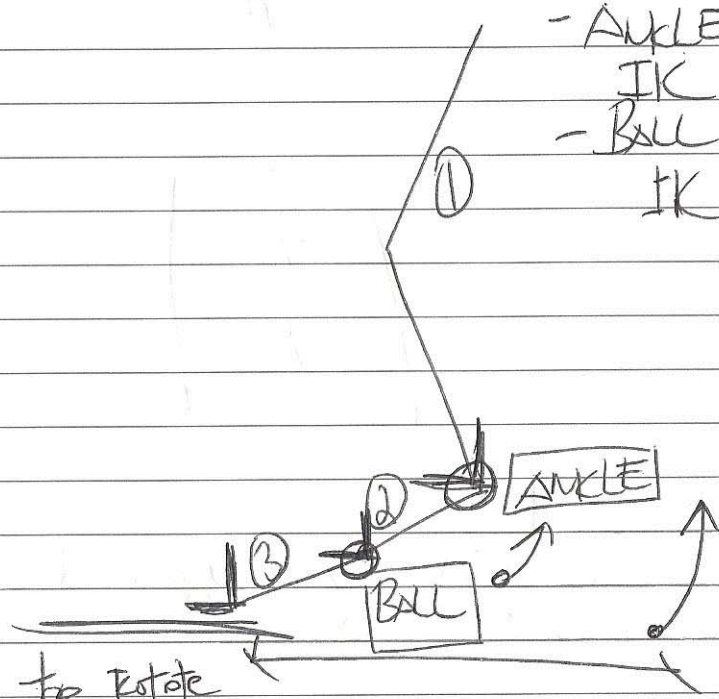
group → pc to wrist control
pole vector

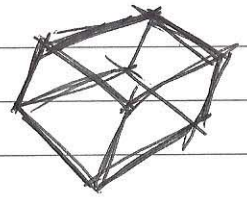
group
- group - show group node display handle
- handle controlled by keyframing

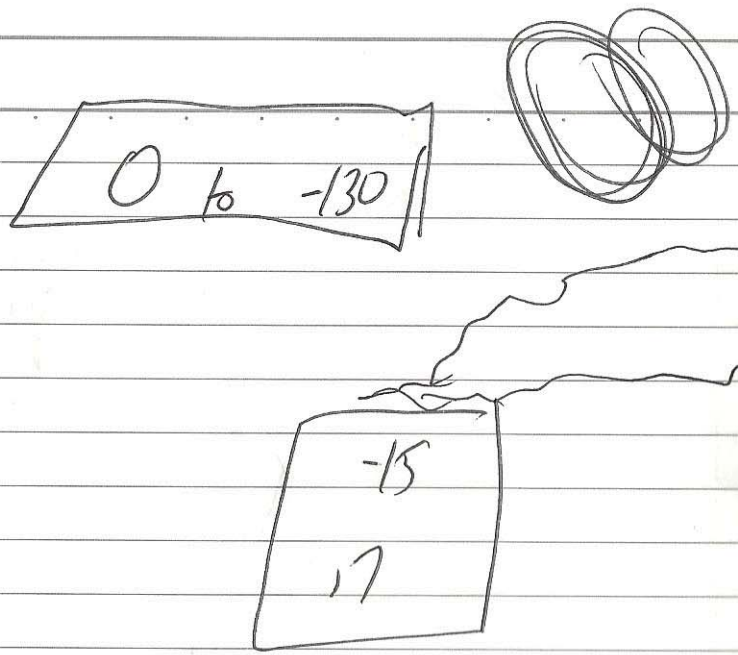
- PV -
- group switch -



- ANKLE IK
- BALL IK





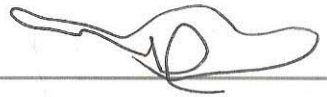


- Loc Parent
- Loc Aim - Aim Negative degree to → Rotate X

- HEAD Aim -

- LEG Locators for Twist -

Aim [Y]



if y > 1

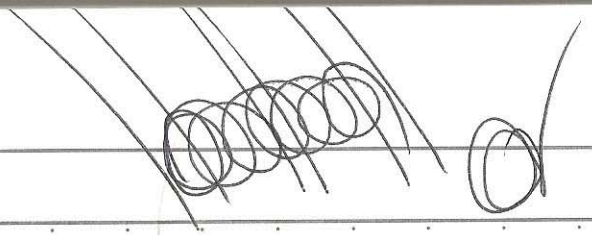
DIST

if DIST x > y, then pole vector 1

else pole vector 0

if translate

0 to 60



animation_left Forearm

.8

.6

animation Right Forearm

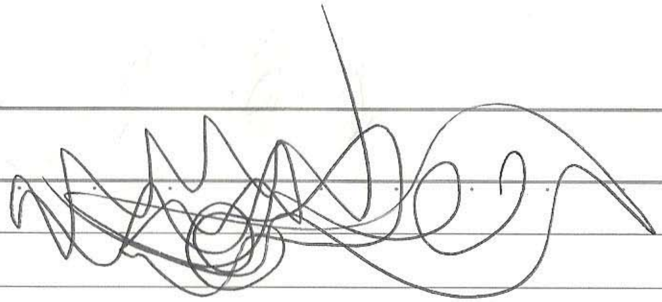
Y DOWN

WRIST

~~FK PIVOT~~ HIP SWIVEL

FOOTROLL

LEFT ARM FK



8.695
-8.705
6.036

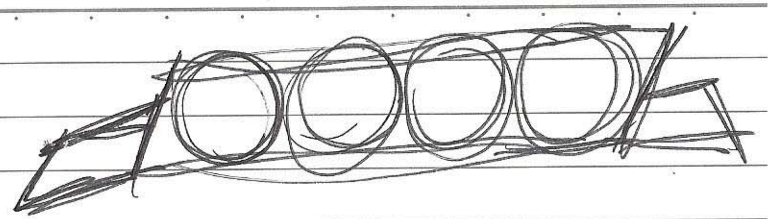
-27.632
1.84
-24.388

Q - REAR BUTTOCKS LOOK ①

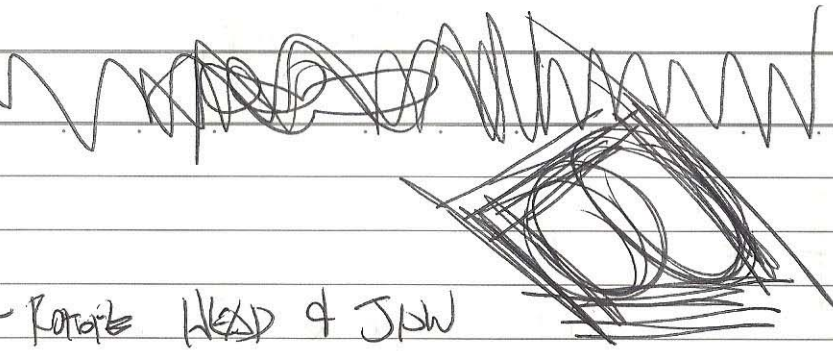
- FRONT GROIN AREA

1
360
2
720

24.62



1
360
3
1080

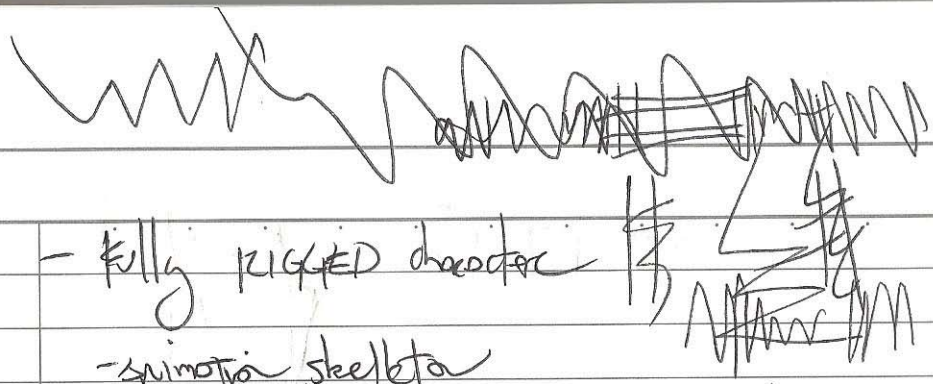


- Rotate HEAD & JAW

- Hip swivel

Root Mode

Foot Controls



- fully RIGGED character

-animation skeleton
-driver skeleton
-DEFORMATION skeleton

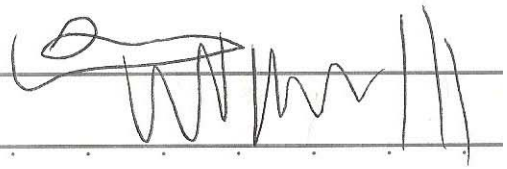
- Import DRIVER AND DEFORMATION SKELETON into engine

- bakers sculpt on body -

- 1 [redacted] on each arm

2 total

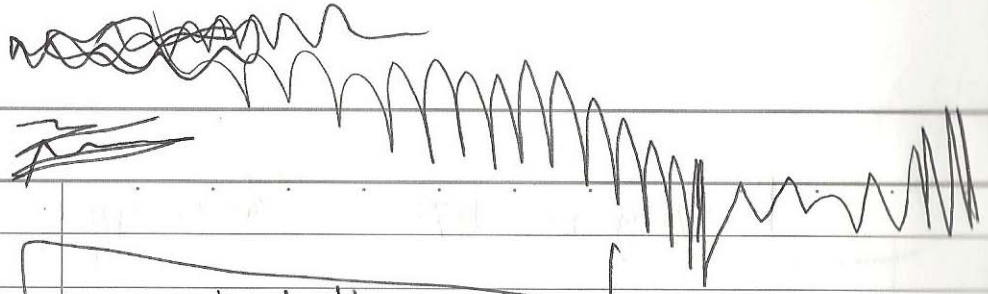
A'ZONE



Schedule

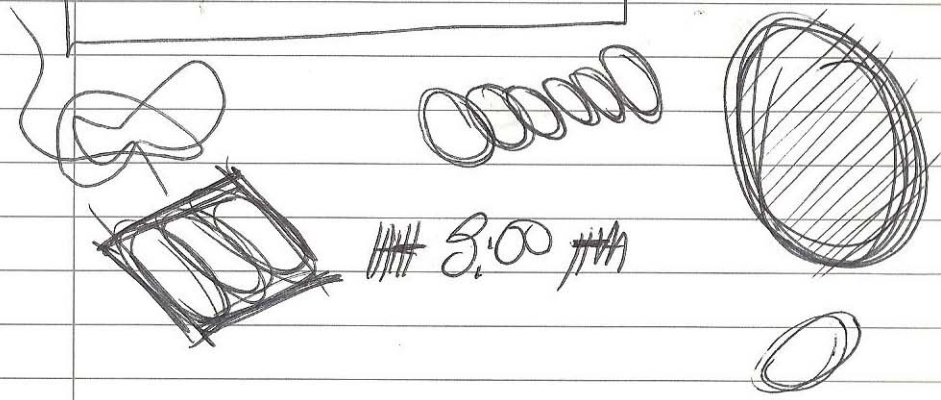
- Fully rigged character shapes and scu
  backed into engine for tests
- corrective sculpts added to mesh for bui
- Animation tests of character on scr
  & deformation tests

- constraint support system and compiling
  methods for build system in engine
- facial mocap targeting system for game simulati
  and targeting capture



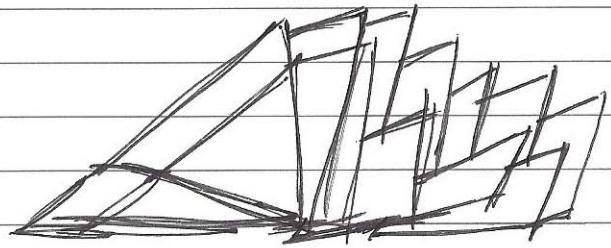
- target blend - spot -
- Dynamic tail -
- bounding box
- collision object

Look @ later



Analyzation of Hoop System

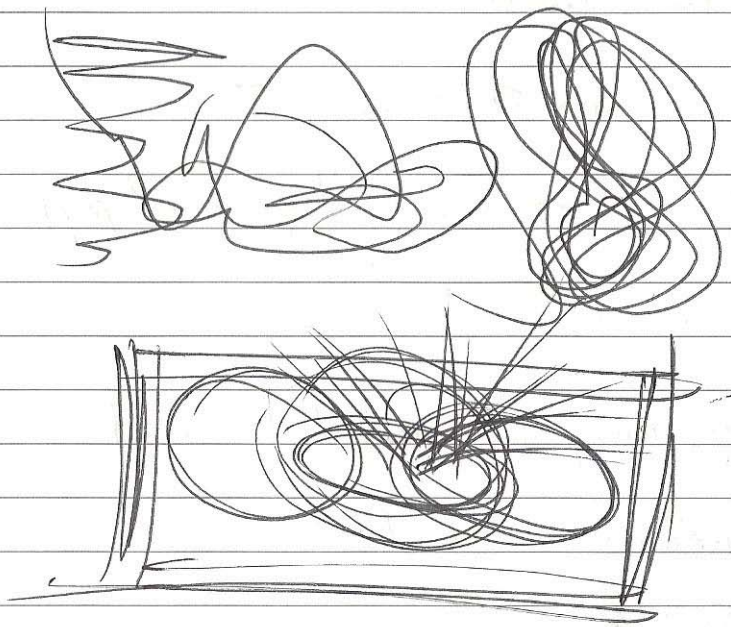
- look for better uses of capturing data
- performance capture of facial system & optimization into game system



maya code

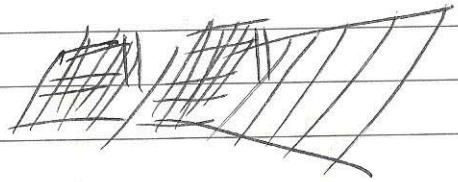
360 99823075

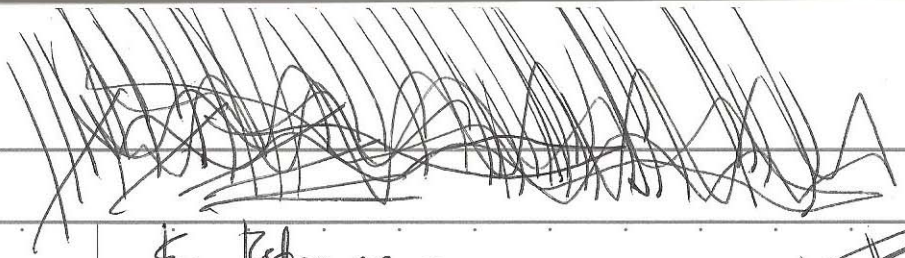
65701



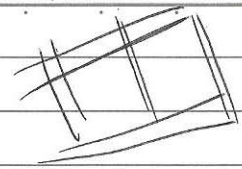
Meeting w/ MIT Livingness

1 GB

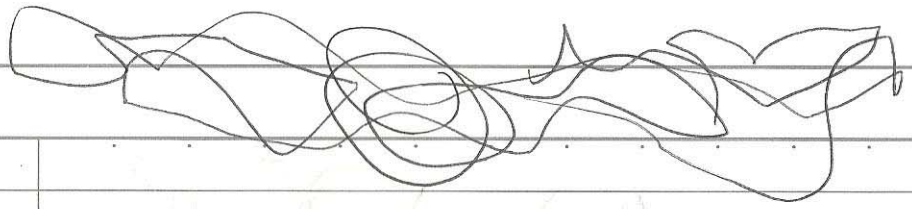




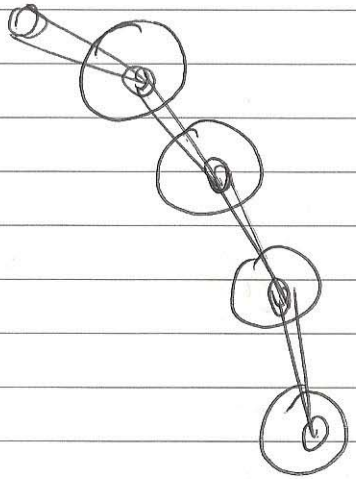
For Reference



- 6 episodes of StarWars —
- Sopranos — (for facial gestures of people)
- animated SW series
- any mocap reference from Lucasfilm SF
- (performance capture) book
- ~~[illegible]~~
- motion rigs of quadruped movement and construction from SF (3 person shoots)
- SW Games, HALO 3, ~~[illegible]~~ Godfather video game, GTA 4, Call of Duty 4,



Meeting 4 Design Room



Biped ~~[illegible]~~

child, Apprentice Boy, swoops Kota, swoops Kota Hostage, Bail Organa, Bail Organa Hostage, battle Damaged Vader, Death Vader,

Drunk Kota, emperor Palpatine, Emperor Royal Guard, Exiled Jedi, gorm, gorm Hostage, imperial officer, jedi General, juno Eclipse, juno Pilot, juno Tank Top, Kazdan, maris Brood, mon Mothma, mon Mothma Hostage, daiwan, ozzik Sturn, player, player Act Two, player Cloud City, player Death Star, player Death Star Hosp, player Empire Pack, player Exiled Jedi Bonus, player Felucia Act 1, player Felucia Act 2, ~~player~~ player Kashyyyk Act 2, player Ultimate Evil, player Ultimate Good, princess Leia, proto Rebel, shaak Ti, Dark Felucian Storm Rider, felucian Storm Rider, juno Eclipse, juno Pilot, juno Tank Top, Maris Brood, mon Mothma, princess Leia, shaak Ti, gold guy, 5D6 KAT, anakin, bail Organa, Darth Maul,

Droids

R2D2 R2P3 R3Q5

~~Raxus~~ Raxus Droid Claw
charge Capacitor
Core Scout
Core Security
imperial Interrogator
Loader Droid
Scrap ~~Drone~~ Drone
Scrap Sentinel
Raxus Droid KG type
mouse Droid
Droid Roller
Gonk
jkt - junk Titan
Raxus Scrap Spider
tie Control Tower

- AD call

- demo PT

- look @ features of cinematics and go from there
- look @ testcases & animations

- look @ animation system of any engine and RIG SETUP of characters in game

- look @

* Categorize Character Files into Different Subcategories

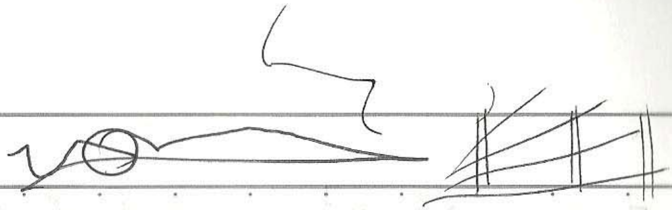
⇒ Droids -

⇒ ~~Mobile~~ Biped Human -

→ Creature -

- machinery -

A'ZONE

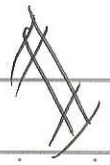


- Test Cases for Cinematics and Animati

  - Cinematics
    - Use assets from TV show for tols
    - Rendered frames or Game Engin
    - possibility of higher resolution players as lighting and toolset

  - Do we want to render cinematics in the game engine OR Do we want to ren in own engine

Render movie of action sequence



- Cloth simulation + Character Setup

character pipeline w/ cloth simulation + collision detection

possible locking out of joints on cloth simulation
  - use of joints targeting vertices locked out

Cinematic Toolset
- ~~cinematic tool~~
- probably use film toolset + assets
- modeling solution for RIGS
-

Animation Toolset
- copy weights function
- some sort of auto rigging solution
- control setup solution for

Camera Movement

- Camera Movement in area for third person
- follow camera around person for navigation purposes
- switch between different views within space

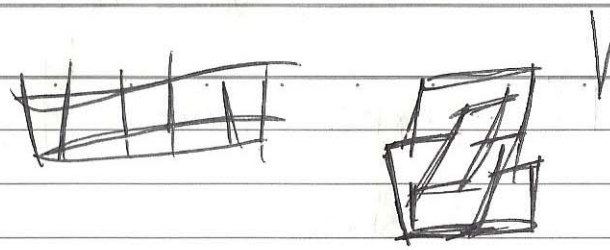
- camera angles and multi view plane

- flowing [redacted] vehicle and character manipulation

- ~~[redacted]~~ look @ lighting setups of everything

-

A'ZONE



Animation + Cinematics

86,058 tris total

107 lights

10 Hamilton Landing

Novato, CA 94949

Animation Tool SET

workflow, tools, cinematics

Cinematics

- Think if we want motion capture used for the acting performance in the sequences
- Think about the UPDATED things being used and if we are ~~going~~ how big the sequences are going to be
- ~~Other~~ do we need to USE UPDATED environment models and textures for the pre-rendered ~~scenes~~ scenes
- look @ possible ways for upgradable RIGS AND SUCK for cinematic quality -
- look @ better animation system quality for output.

Meeting 1st June Tuesday @ 2:00 P

ways to coordinate with SF

- contact LAL as well as LM and get into their tools and production pipeline
- find more points of reference within organization to found base with in order to find more assets
- look @ their MDK files for the sake of setup as well as polycount and topology and Deformation
- begin to implement ways of Deformation techniques

RIGGING TRAINING

-

begin to talk to Nigel about more advanced setup for RIGGING & strategy and implementation

- go over DEFORMATION TECHNIQUES and train how to setup topology properly

To Do List

- Look into possible mechanics of locomotion and keyframing importing data into technology

- Cinematic Toolset - look into TV show assets and begin coordinating with SF to receive their assets for Indy as well as look @ their toolset for implementation

- look @ possible facial system setups to do for blending of facial targets as well as joint construction

- look @ the exploration of importing higher resolution models and textures into the engine

- look @ possible facilities we can [illegible] mocap in scamp ~~[illegible]~~ nearest proximity

- look into more python and scripting things for new version of maya

- begin to look @ possible pipeline implementation and setup of what we can do to make more efficient workflow per ~~workflow~~ title

- look @ possible render farm times of prerender cinematics for cutscenes

- meet @ with shader guy to do blended normals for next gen wrinkling and displacement

- look @ possible in-game solutions for p[illegible] based dynamics ~~[illegible]~~ solutions, for cloth as well as possible hair solutions

ewebblaster
ewebb missle launcher
turret unmanned

Creatures

Blood Ripper
giant Slug
giant Snail

felucian River Beast
female Rancor
painted Rancor Blue
" Green
" Purple
" Yellow
Stippled Rancor

giant Slug
giant Snail
girlo grub
kz_kordaan
bull Rancor
sarlacc Grabber
Sarlacc Tendrils
Sarlacc Tendrils Act 2
purple Tentacle
whip Lizzard

Drexl Collector, Drexl Fighter,

[crossed out] drunk Kota, emperor Palpatine, exiled Jedi, green, imperial Evo Trooper, [crossed out] imperial Gunner, imperial Incinerator, imperial Jump Trooper, imperial Officer, ivoy-chef Lsoche

jedi General, mace Windu, obiWan, ozcilStren, qui Gon Jinn, [crossed out]

Raxus Scrap Cannon, trooper Kashyyyk, trooper Snow, trooper scout, trooper Snow, trooper Storm Carbonite, trooper Storm Classic, Trooper Storm Commander, Emperors Blue Guard, emperors Royal Guard, emperors Shadow Guard, Felucian Rider, felucian Shaman, felucian SubChief, felucian-Warrior, heavy Defender, Drexl Jawa, Jawa, ugnaught Bar Patron, ugnaught Bartender, ugnaught Worker, bernie, grinder, leChuck Zombie, Dark Trooper, scrap Guardian, wookie Hero, wookie Slave, wookie Warrior, scrap Defender, shock trooper, wookie Giant,

Props / Tools

crash Debris
fusion Cutter
Kota Bottle
light Saber Unbuilt
prop Master
raw Meat
tools Canister
tools Clamp Vice
tools Laser
tools Pliers
tools Power Unit
tools Probe
tools Remote Control
tools Wrench
tower Pieces
ugnaught Bottle A
ugnaught Bottle B
laser Saw
laser Torch
[crossed out] Sarlacc Spike
tapestry Insignia

- navigation = how will we explore the space of the environment and what type of space will this be

- what type of approach do we want to take in regards to the design intent of the space which we are in

what do we want this to be?

how is coordination going to take place between ourselves and other departments of Lucasfilm

Technical Art Document

Animation

- motion reference
= motion capture reference
- basis of locomotion between different character types
- quadruped motion
- vehicular motion
- reference looks @ basic human physiology & as well as quadruped physiology
- study different types of rigging procedures being done of next gen assets
- looks @ different types of physiology and behaviors based on human behavior

A'ZONE

Categories: motion:
DEFORMATION:
lighting:
ENVIRONMENT:
playability:
control:
fun factor:

~~Agenda Points~~

- proper facial capture and animation be done on characters
  - up resolution on facial performance bet cutscenes

- multiple rigs and animation based on the scenes within game

- how do we want to be portrayed (will it be on the wii) or just n gen titles

- how is communication going to be done between different teams and tasks

- ~~is what terms of facial~~ how are we going to increase commun between ourselves and San Francisco

Cinematic purposes

- GPU of WoW 2 Cinematics use lower poly in game models as well as higher resolution models for cinematic use

- WoW is pre rendered cinematics used for pre rendered game implementation for higher resolution stuff

Assassins Creed

- Animation seems smooth, delay in reaction between control movement and actual motion
- facial motion quite stiff
- motion blending seemed relatively smooth
- although facial performance stiff, and showing little or no emotion (weighting of jaw and lips look rigid bound)
- ~~Environment relatively easy to figure out in~~

PRODUCING -

- HOW TO MANAGE AND HANDLE TEAMS AND PEOPLE

- HOW TO COORDINATE BETWEEN DEPARTMENTS TO GET INFORMATION TO THE TYPES OF THINGS I NEED

- LOOK INTO EVOLUTION OF GAMES BEING PLAYED FOR COMPLETE ANALYSIS

- FILM ASSETS

- LOOK @ HIGHER END PRODUCTION QUALITY WORK IN ORDER TO DETERMINE WHAT IS NEEDED

- COLLECT AND EXPLORE ASSETS FROM BOTH TV AS WELL AS FILM TO LOOK FOR THINGS TO USE

- LOOK @ PERFORMANCES IN OTHER PR IN ORDER TO SEE WHAT TYPES OF MOTIONS AND ACTIONS CAN BE USED

- LOOK MORE @ CINEMATICS OF HOW SEE WHERE THEY COME INTO PLACE I THE GAME AND SEE WHAT TYPES OF LIKES CAN BE USED ON OUR FRA

- BEGIN TO LOOK @ ANGLES OF SHOTS AND CINEMATICS FOR PROPER PERFORMANCE

- BEGIN TO BEGIN TO LOOK @ MORE ADV TECHNIQUES SUCH AS NCLOTH AND FUR TO

Things to Look Into

- Locomotion and Animation Cycles
- More on Unreal Engine
- Look @ Blending System and SETUP
- [illegible] python [illegible]
- WEIGHT BALANCE AND FORM - MOTION STYLES THAT COULD BE APPLICABLE TO WHAT WE ARE DOING

A'ZONE

Keyto0 -

Call of Duty - synopsis.

- Obviously motion capture w/ keyframing on top, environments difficult to navigate through & hard to figure out, navigation is difficult, deformation decent, facial performance needs work

- Gears of War

- Good animation system
- good camera work on movement through space
- control easy to use & fun

Spider Man 3

- good control & good moving camera
- character animation transitions are smooth
- change of day while playing -
- Daytime to nighttime

- Tools for authoring cinematics

- Gamebryo authoring cinematic tools

Projects to look @ for reference

~~[illegible]~~ TV - for facial performance and emotion we should look @

- Heavenly Sword (Facial Capture)
- Final Fantasy (Facial Animation)
- ~~[illegible]~~ ~~WOW Cinematics~~ Fight Night Round 3
- ~~Tiger Woods~~ KONG (non linear blending between points on face for proper performance)
- ~~Reference~~ ~~[illegible]~~e

- PERFORMANCE ON TV FOR GESTURES

A'ZONE

[redacted]

[redacted] Weighting Tool

- Transfer of skin weights from [redacted] mesh to the next.
  - This can take place in both object space and world space
  - saves out files as an xml [redacted] and names according
  - checks vertice weighting w/ an overabundance of weights on a mesh and Deletes the top vertice
  - [redacted] averages out the amount of vertice weighting in a mesh and displays them

NODE for Deformation and Center Rotation

- this is a quaternion based node meeting to be supported in an engine that Rotates joints based on poses in orientation and not in euler angles

[redacted]

body [redacted] topology
[redacted] - 3496

- 16090, 12482, 4618
- 3234, 88329

Getting Familiar w/ Tech Art Document

t counts — typical

Poly Count -

Research into other Companies

Other Projects

Motion Capture

Animation Styles & Physiology

~~Comparison between Render + Next Gen~~

Modeling & Topology

What other Companies Process Is

Looking @ DIFFERENT Ways of Tracking Systems

Creatures in ~~Revenge of the~~ Sith

- Lizard quadruped
- 9 foot tall wookie (physiology and motion of tall person)
-

Vehicular Motion

- mechanical walking two legged machine
  - ships ~~flying~~ ~~floating~~ in / flight

human physiology

- Reference on locomotion

+ Complete Analysis between Lucas Arts Assets a
ILM assets in terms of setup and DEFOR

Average Poly Count = 4385

number of joints = (71)

number of controls =

- Tracer System that allows animation path t
more along while animation is moving

-

~~Environment Design Methodology~~

~~begin to train people in proper methodology~~

pt now the proper techniques we can use for
matics, how should we update the RIGS
other DEFORMATION TECHNIQUES

net companies can we do research on
see what they are doing
- look @ Blizzard Cinematics
- ~~EA~~ EPIC
- ID
- BUNGIE

- look @ several of the Production Houses
to see what we can do, in order
to get their proper information
- look @ several of films to look
at)

- Be a good idea to get into the head of
the content of the games that we are
doing

Look @ FEATURE ANIMATIONS IN
ORDER TO SEE WHAT SPECIFICALLY WE
WANT TO BE DOING (RIGGING TECHNIQUES
and such)

A'ZONE

Model Topology

- look and analyze the different assets that need to be used-
- what is base topology of the mesh (poly count)
- look @ Different meshes in games in order to understand what the DIFFERENT counts are
- look @ crowd topology as well as other DIFFERENT forms of LOD's
- what are the proper Mesh seams needed per topology in order to make things deform properly
- look @ ~~DIFFERENT~~ DIFFERENT types of STRETCH TESTS IN ORDER TO MAKE THE PROPER DECISION

Performance

- if we are beginning to use m capture, what are the types of actio that we are wanting our people to us

TECH Document for SHADERS

- what are the DIFFERENT SHADER ty we can use for proper blending of textures based on DIFFERENT PROCEDURES,
  - PROCEDURALLY, how can we DRIVE the blendings of normals for wrinkl

	REFERENCE	CLIP
RUN	RUN_REF	~~LEFT FOOT~~ LFOOT
WALK	WALK_REF	L FOOT
IDLE	IDLE_REF	LFOOT

Training DVD's For Motion & Python

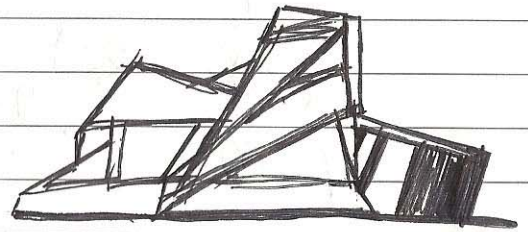
- Delete meshes in LOD's
- Delete extra meshes in animations
- Delete

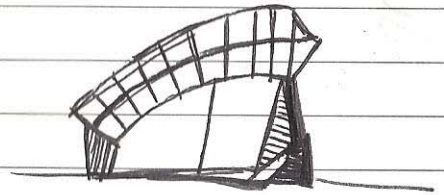
[6037]

6328

6209

KC





Looking @ @ Stuff
- Gamebryo Asset Viewer

@

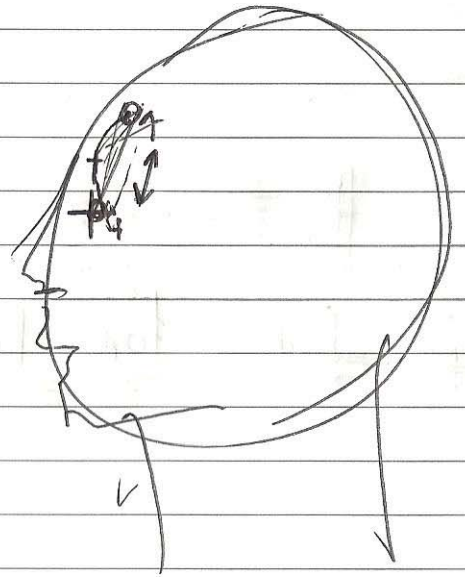
- TAD For Pipeline -

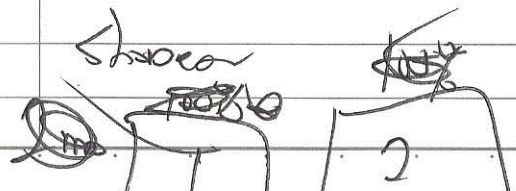
- Game Engine Being Used For Previsualization
- @ Look @ Shader Network system for SET
- look @ blended normal wrinkles as well as deforming bshape sculpts

- other titles to look @
  - Look @ Sith assets
  - Look @

LOD 0 = 10-12
LOD 1 = @ 5-6
LOD 2 = 2-3

Felix



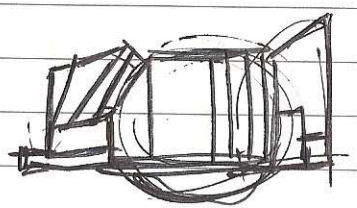


- winged creatures anatomy for flight
  - joint structure and motion required for flight
  -

Shader Attributes and Looking into Blended ~~Normals~~ Normals Maps
- look into shader networks and blended ~~blend~~ maps and wrinkle maps
-

Review more animation information -

- myImmerseShader



-

Samples
Models
ΔTE

- Nodes From Maya Needed to be Supported
  - SetRange
  - Distance
  - Aim Constraint
  - Locators
  - Multiply Divide
  - +/- Average
  - CONDITION
  - Set Driven Key

Gameday Engine Evolution

- Authoring Cinematics
-
-
-
-
-

- There are no tools for Authoring Cinematics in the INDEX

Evolution of Engine

22 - no -

23

other Deforming Rigs to look @
- try to get [illegible] sth Rig for Facial Setup
- other muscle systems to look @
- - look @ Nbrxia system for brain
-

- other jiggle type of Deformation to look into

- support of soft body Dynamic system in character

- non human physiology

~~[illegible]~~ - quadroped Locomotion as REFERENCE
-
~~look~~ - begin to look @ test Rig in Research and breakdown

Layers
- Animation Layer
- Driver Layer
- Deformation Layer

- control setups
- hands
- feet
- head
- spine
- Root Node

~~position of~~ locators setup in hierarchy

~~Export of~~ Deformation skeleton [illegible] Baked

- Privacy Agreement Account + Bank Citibank
-

A'ZONE

A'ZONE

- Look @ ~~Unreal Engine Render~~ Of

INDEX = Research Into Other Companies
Other Projects
Motion Capture
Animation Styles and Physiology
Comparisons Between Render & Next Gen
Other Useful Sources

EVALUATIONS OF NEXT GEN TITLES

- CONSTRAINT SETUP FOR HAND SYSTEM

- expression using prop for gun

```
if LwristTransCON.GUN = 1
{
  ( LblasterLoc.tx = LwristJNT
    "    "    " .ty = LwristJNT
    "    "    " .tz = LwristJnt
else
  (  = 0
       0
       0
}
```

Dev Plans

- what are your areas of expertise

- what types of research do you want to be doing as we develop GEN 3 projects

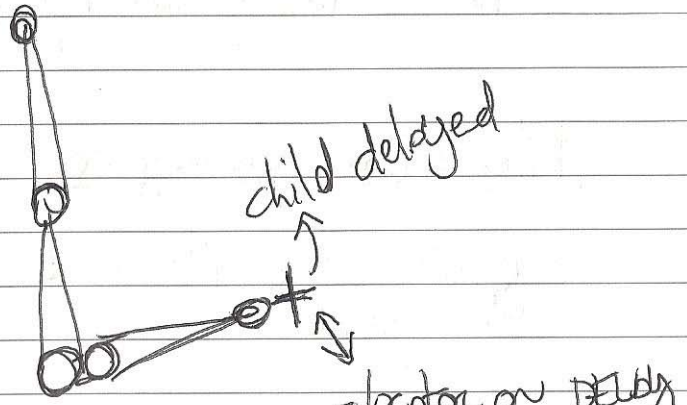
- what technical aspects of cg are you comfortable in and what areas do you want to grow in

- ~~have~~ ~~you~~ what titles have you worked on and how can ~~these~~ what aspects of these titles are applicable to the plans we are doing here

- Begin doing exploration of cloth physics in an engine

- Read through documentation of all of the physics attributes to look @

- start application w/ delay node and see where we go from there.



- for delayed
  - child point constrained to joint

A ←→

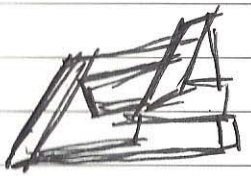
- hand gets close to "A", constraint switch happens

Movie - show DIFFICULTY of animation blend.

what I want - EASY to use
- Easy to import
- Easy to change transition time between moves
- Each timepiece should have drop down menu that we change pivots as well
- blending options

Example - AE

- show DIFFICULTY and lack of EASY USE somebody tool



Blending System Setup - look @ motion builder

look @ developing animation blending system

Film Game Convergence

- Export Jango Assets
- Export Player Assets into Gamebryo

- Export of Jango
- Export of Player

- Import into viewer (Jango)
- Import into viewer (player)

- show animation system, show what i want

Things to do tommorow - 11/02/08

- playblast walk
- playblast run

- Import into aftereffects
- show timeslider and how I want animation tool to work / Dissolve

- show Gamebryo Animation System
  - import tracks (to difficult to use)
  - how I ideally want my system to work

Film Game Convergence

- Export Jango into scene, Export run into scene
-

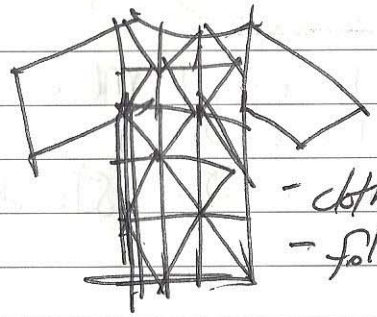
- Reminder to install Physx 2.6.4 into cloth simulation kit for usage to it.

Animation System -

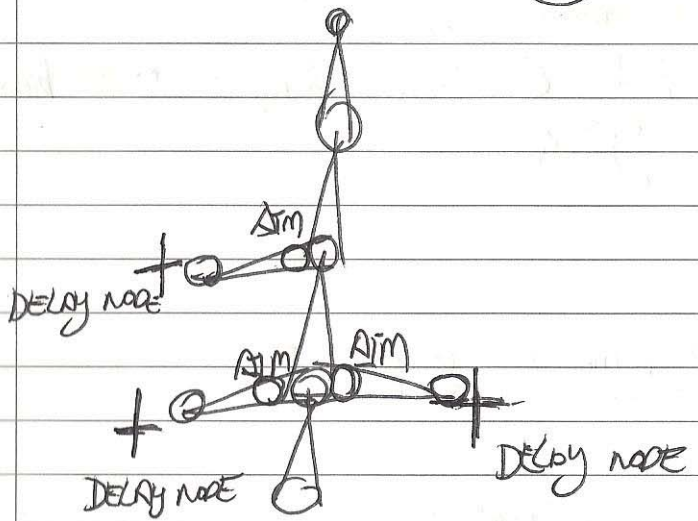
Cloth Simulation

Delay Node - not actual cloth sim

NBA 2K Bishapes Cloth Sim



- cloth real time no stretching
- falls on collission



- need smart IK system that can in mid air for leaps and jumps
- look for foot pivoting techniques

Player with blendshapes

Blending System

- Tool very DIFFICULT to USE
- Instructions very vague and seems almost as if it is a struggle to get assets to work properly in gui
- Pieces of shit

Spiderman Animation Evolution

- wheels don't rotate on vehicles making it look horrible
- when spidey stops moving he stutter steps to position

GET for PS3

FIFA - Latest
UEFA Champions - Latest
~~Madden 08~~
NBA Live
NCAA College ~~Bball~~
NHL 08
Fight Night
NBA 2k 08

- UFC
- HULK
- ~~GODFATHER GAME FOR CITIZENS~~
- GTA IV FOR CITIZENS
- ~~FIGHT NIGHT~~ PUMMEL REFERENCES
- ~~SPIDERMAN REFERENCE~~
- NBA ~~LIVE~~ STREET Home court
- NBA 2k (FOR CLOTH)
- REAL TIME CLOTH SIMULATION COMPARISONS

16019

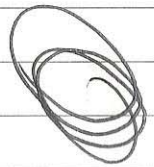
1 to 5

12 x
33 900

900
12
1800
900
10800

3
33 | 10800
99
9

32727



Completed Test Animations
- checked in perforce
- Links to them
-
-
-
- Links to Exported Files
- Links to LODs
  - sloppy and glide, but reduced poly c
- Look @ Animation Blending system
- Reports of Engine Analysis received back
  Emergent and written in evaluation
- after animating w/ TFU assets w
  be doing analysis of character setup
- continue work on Tech Art Docum