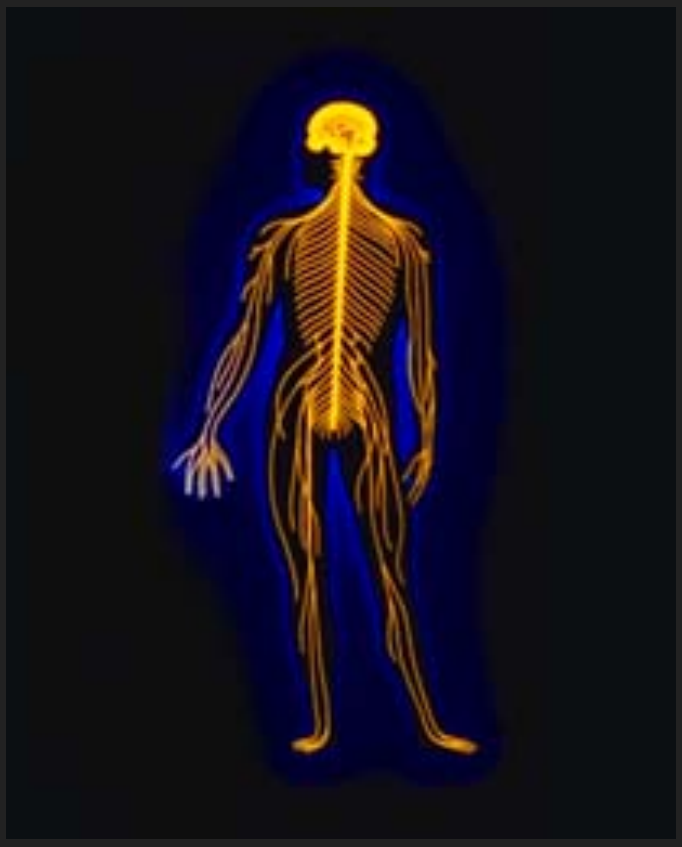
FUTURE OF HUMANOID ANIMATION
WORKING GROUP

WEB3D KOREA CHAPTER, 21 JAN 2019

AGENDA

- Charter
- Goals
- Strategy
- Trends
- Challenges
- Future



Nervous System

CHARTER

THE H-ANIM WORKING GROUP RECOMMENDS STANDARD SEMANTICS FOR SKIN, SKELETONS AND INTERNAL ORGANS FOR REAL-TIME ANIMATION OF ANTHROPOMORPHIC AVATARS AND OTHER SKELETAL FORMS AT DISCRETE LEVELS OF ARTICULATION. THE WORKING GROUP PROFFERS PROTOTYPES, EXEMPLARS, BEST PRACTICES, AND TECHNIQUES TO INTEGRATE AND INTERCHANGE ANTHROPOMETRIC, ANTHROPOMORPHIC, AND MOTION CAPTURE DATA INTO REALTIME HUMANOID ANIMATIONS.

Chairs, H-Anim WG

GOALS

- To complete the tasks in ISO approved New Work Item Proposals
- Recruit animators, illustrators, and other professionals
- Cooperate and collaborate with Medical WG on NWIPs
- Increase each member’s participation and productivity
- Advertise the H-Anim ISO standard to stakeholders
- Market H-Anim authoring tips and tricks to customers

USE AUTHORITATIVE DATA SOURCES

- Articulating joints – Foundational Model of Anatomy, an ontology of the human anatomy by the Structural Informatics Group at the University of Washington
- Motion capture – BioVision Hierarchy format
- Surface Landmarks – ISO 7250-1:2017 Basic human body measurements for technological design – Part 1: Body measurement definitions and landmarks
- Behaviors - Diagnostic Statistical Manual of Mental Disorders 5th edition - Animate every concept and diagnosis evidence!
- States and Processes - International Classification of Disease-10 (ICD-11 ontology-based)

MODELING, SIMULATION, AND ANIMATION

- 3D body surface scanners to track 2 m^2 of skin changes
- Image 80+ organs to register, diagnosis, and animate them
- 150+ Mb/s MoCap for days outdoors and indoors/vehicles
- High bio-fidelity in phantoms to train professionals
- Virtual try-on to obviate returns, boost sales, and rightsize
- Interactive operations to design, regulate, and litigate

CHALLENGES

HARMONIZING AND CONSOLIDATING STANDARDS

- Intellectual Property — closed vs. open source [2M+ finite elements] model, 50,000+ USD license
- Statistical vs Individual — whole-, full-, or total-body anatomical [organ] models of solid tissue including bodily fluids and gas dynamics for 7.7B humans, up to 3.3 x 10^9 sec lifetime per person, 3,000
- Data — privacy compliance adds costs, volume increase revenues, retention increases services, reuse builds loyalty or addiction, accuracy is proportional to utility, and formats are leverage
- Device Interoperability — [Medical] Body Area Networking, consumer-grade, medical-grade, integrated control, wear and go, common sensing picture, calibration, built-in test,

WEB AND FACE-TO-FACE

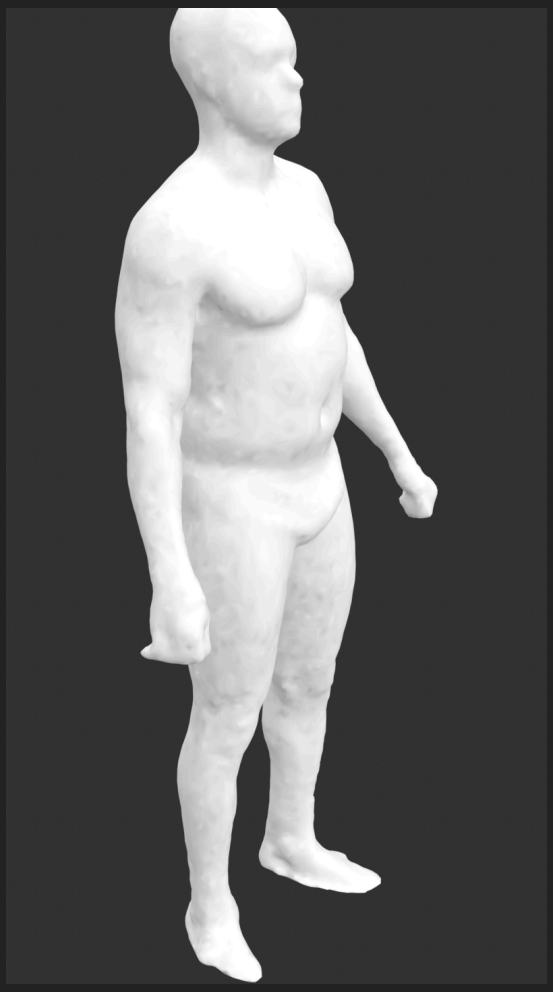
- Middle and High schools - science fairs, Boy Scouts' merit badge, curricula, and summer internships
- Universities and colleges - majors, minors, job fairs, and clubs
- Trade Schools and Registered Educational Providers - modules, lectures, courses, and certifications
- Congresses, conferences, symposia, summits, workshops, meetings - ads, tutorials, contests, booths, sessions, papers, posters, and panels

OPPORTUNITIES TO PRIORITIZE

- Industry connections – MoCap device manufacturers, 3D scanner manufacturers, medical device manufacturers, clothing & apparel makers, etc.; Liaise with DICOM, IEEE SA, HL7, World, Regional and National Health Organizations; and Psychology and Psychiatry Associations
- Gov't and Military requirements – open standards and royalty-free data rights specified in human-motion/-movement centric R&D deliverables (i.e., X3D/H-Anim scenes in iPDF or HTML5 files)
- Academia's offerings – Professors, Instructors, Teachers, Curricula, Tutorials, ebooks, Texts, eCourses, Capstone Projects, MS theses, and PhD dissertations
- Public – Hack-a-thons, App Stores, Expositions (e.g., Health & Wellness, Sports & Fitness, and Education & Training), Web3D Symposium Birds of a Feather, H-Anim Wiki revitalization, social media campaign (i.e, Facebook, LinkedIn, etc.)

DISCUSSION

- Validate Charter
- Prioritize Opportunities
- Set milestones
- Define performance measures



SizeStream SS14 - William Glascoe