



DAN SCHNEIDER

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Highlights:

- **MFA Visual Effects and MA Animation**
- **Oversaw VFX Houdini to Unreal VR pipeline for first large scale VR crowd MLK “The March”**
- **3+ years as Pipeline Supervisor Digital Domain** [Production Domains: Commercials/Episodics][Pipeline Domain: Houdini/Crowds], Los Angeles
- **Pipeline Supervisor Digital Human Group at Digital Domain** Oct 2017-April 2018
- Active research and training in **Machine Learning** techniques, API;s and Mathematics
- **Sen FX TD Method Studios [Dr Strange] [Okja]**, Vancouver
- **Senior Technical Director Rising Sun Pictures [Gods of Egypt] [Game of Thrones se6] [X-Men: Apocalypse]**, Adelaide
- **MoCap/MoEdit Pipeline Technical Director Weta Digital [Hobbit3:Bo5A] [BFG]**, Wellington
- Senior Pipeline Technical Director at Newbreed VFX [Pyramid] [Horns], Montreal
- **1+ years as Final Layout Output Technical Director at Dr D Studios [Happy Feet 2]**, Sydney
- 2+ years as a Senior Technical Director 3D R&D at Charlex, NYC
- **Author and maintainer of www.eyevex.com** “Building Houdini Tools and scripts” TD Blog
- Senior experience in development of production tools, scripts, and general pipeline
- **Expert Houdini knowledge spanning 19 years**, including scripting, asset building, and HDK
- **Extensive knowledge of Crowds** applications, pipelines, toolset development, and production issues.
- Extensive knowledge of rendering including shader writing
- MFA thesis hand coded in VEX to make basic neural operators for brain building; topic crowd sim related
- Attendee of SIGGRAPH 15+ annual conferences. **SIGGRAPH Pioneer Member**

Skills:

- **Operating Systems:** Working knowledge of Linux (KDE/GNOME/Xfce), MS Windows 3.x/NT4/9.x/2000/xp(pro), Vista/Windows7/8.x/10, Mac OS9/OSX.x, MS-DOS, Android, and Irix
- **Languages Proficient in:** Python (Houdini/HOM, Maya, scipy, numpy, Tensorflow, Keras, pySide, Katana, Tank, Cortex, MEL, RIB, RSL, VEX, HScript, C/C++ (Houdini Dev Kit), Houdini Expression Language, PERL, BASH, TCSH, various Massive ASCII file formats, asf/amc ASCII files, ActionScript, Rez related commands
- **Experience with:** USD, Numbra, Pandas, OpenCl Katana Node API's, PHP, C++, Mental Ray SDK, metaSL, TK/TCL, MYSQL, Javascript, Blender API, HTML, XML, YAML, Json, VBS (Wscript), shotgun api, Shake script, Cmake
- **Applications Proficient in:** Houdini FX; Massive Prime; Autodesk Maya; Pixar's Renderman/ProServer; Mental Ray/MTOMR/StandAlone; Rush; SVN; git/gitlab; Jupyter lab/notebook; Adobe After Effects, Premiere, Photoshop, Illustrator, Encore, Animate(Flash); GIMP; Cutter, Kate, Kdevelop, Eclipse; Inkscape; Painter
- **Experience with:** Unreal Engine (UE4); Virtual Reality; Foundry Nuke, Katana, Mari; Vray; Redshift; Autodesk RV, Mudbox; Nuance, Zbrush; Vicon IQ; Natural Motion Euphoria; Condor; Discreet Flint (effect); Renderman for Maya; Arnold for Houdini, Motion Builder; Blender; Visual Studio; Shake, HDRShop; Pro Tools, Flipbook, Wavelab; Indesign; Ableton; Adobe Dreamweaver; Substance Designer, Alchemist; Docker; Trac; JIRA; Google Cloud Platform (GCP), Amazon Web Services (AWS)



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Work:

Digital Domain [Commercials/Episodics][Agents of S.H.I.E.L.D. eps: 7.1 7.3 7.6 7.13][A Series of Unfortunate Events eps: 2.1 2.7 2.8 2.9 2.10 3.1 3.2 3.3 3.4 3.6 3.7] [Outlander eps: 3.12 3.13][Pink:Walk Me Home][TV Commercials]—Los Angeles, USA: Pipeline Supervisor Jan 2017 – Sept 2020

- **Manged and Curated Production Pipeline:** Coordinated changes with facility roll-outs. Curated task based roles appropriate to project, spot, or episode. Managed preferences and software package dependencies.
- **Supervised and Met Pipeline needs for 2 seasons (1600+ shots):** Managed show pipeline transition to a new facility location between se2 and se3. 2017-18 [A Series of Unfortunate Events]
- **Montreal Facility Expansion Pipeline Stand-up** configuration deployment and testing.
- **Organized Meetings:** Priorities meetings with production to coordinate efforts and address pipeline concerns. Assessed technological needs by correspondence with dept leads and supervisors
- **Prioritized and Distributed Tickets:** Ticketed TDs for bugs and RFE requests coordinating with other supervisors and productions. Corresponded with 3rd party software for managing outside bugs and support.
- **Worked and Coordinated Across Multiple Sites:** Los Angeles, Vancouver and Hyderabad.
- **Trouble Shooting:** Environments, show software packages and ecosystem. In session issues with Maya and Houdini. In-depth analysis of package structure and modulation.

Digital Domain [Crowd Tech]—Los Angeles, USA: Pipeline Sup / Tech Lead Jan 2017 --

- **Designed Houdini Crowd Pipeline:** Data flow within crowds and between departments. Integration with existing department workflows and asset types including Animation, Rigging, FX and MoCap. Evaluation of previous show pipelines, and existing 3rd party applications.
- **Created and Supervised Creation of Extensive Python modules and HDAs:** Including agent assembly, motion editing, importing, lookdev, rigging, proxies, level of detail management, output, transition management, utilities and user facing tools and conveniences. Made use of Vex, Python, Hscript and Hexpression.
- **Held interdepartmental Cross-Site Crowd Technology Meetings:** Across crowds, animation, mocap, rigging, lighting and fx pipeline and technology to solve and coordinate crowd asset and pipeline technology needs.
- **Organized and Ran:** Regular meetings between production, developers and crowd artists to guide and coordinate development through artist feedback, production needs. and scheduling.
- **Consulted:** Advised Artists on crowd techniques. Interviewed crowd artists and made hiring recommendations.
- **Prioritized and Organized:** Task based ticketing and assignments to TDs and Tech across departments.
- Granulated larger development tasks and made schedules for production to coordinate tech with artist needs.
- **Worked with Software Vendor:** to debug, implement features get RFE's and documentation.

Digital Domain [MLK The March]—Los Angeles, USA: Crowd Pipeline Sup Aug 2019 --

- **Oversaw VFX Houdini to Unreal VR pipeline for first large scale VR crowd** featuring historically accurate agents for Time Magazine Location based experience at the Chicago Museum.
- **Advised Crowd lead** on preparation for realtime and implemented work around to mimic offline tools
- **Oversaw architecture, development and deployment of** Houdini Crowds to Unreal Engine leveraging full VFX Houdini pipeline and tools until packaging to UE4
- **Implemented** inline agent motion editing, auto trimming and signal processing tools for export preparation
- **Supervised development** of publishing and export tooling; crowd editing tools for realtime restrictions; and Artist Driven GUI feature development and tooling
- **Oversaw packaging and file specifications** for asset types, manifests, exchange files and I/O



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- **Consulted with production** on technological limitations, exceptions and technology options
- **Worked with performance supervisor, Animation and Rigging leads** to troubleshoot and optimize data and incoming assets upstream
- **Developed Advanced hero promotion** toolset for puppet generation with switchable layers and motions reflecting the agent library packed prims; and prep options for realtime export
- **Supervised creation of Hero Demotion toolset** allowing hero characters to become crowd agents
- **Implemented Crowd facial animation** application and supervised configuration

Digital Domain [Digital Human Group]—Los Angeles, USA: Pipeline Sup Oct-April 2017

- **Stand up of the Digital Human Group** pipeline as a separate entity from production
- **Severed technologies** from specific production pipeline dependencies discovering areas for generalization
- **Distributed** tasks for generalization across production technology departments
- **Worked with** department and software leads to determine needs
- **Configured package ecosystem** minimizing dependencies, in-house tooling and instructed expansion of configuration abilities

Method Studios [Dr Strange][Okja]—Vancouver, Canada: Sen FX TD June – Nov 2016

- **Dr Strange. Completed shot content and created tools for Tea Room Seq:** Fractal floor tile animation and procedural geometry creation, animation and rendering of fractal shockwave eruption through tea room floor in Houdini utilizing assets, encapsulated networks, turtle, python (HOM), Hscript, VEX and VEX expressions.
- **Okja. Created Fluid Shot Content:** Made use of encapsulated networks, scripted operators, dynamics via use of FLIP fluids, particle systems and procedural geometry in Houdini.

RSP [Gods of Egypt][GOT se6][X-Men Apocolypse]—Adelaide, SA: Sen TD July 2015 – May 2016

- **Created and Implemented Houdini Massive Arnold Crowd Rendering:** Python API for Massive and Arnold crowd file types, geometry material mapping aggregator/resolver integrated with asset manager, python lib for editing crowd files, Houdini HDA upgrades for crowd editing, creation of new HDA and VEX based nodes for crowd edits, runtime render engine injector for Arnold materials.
- **Design and Implemented Houdini Pipeline Overhaul:** Modularization and creation of versions pipeline packages for inhouse software and HDA based toolsets, creations of HSITE package and centralizing configuration and UI integration, implementation of standards for HDA and py lib authoring and standardizing preexisting tools and libs, removal and consolidation of bloat and redundancey across departments.
- **Design and implemented Houdini “Assetizer” and modular HDA asset workflow:** Round trip edditng with Logic and Data separation and integration with preexisting publishing systems, Python api creation, native OTL manager replacement, HOM extent ions for presets, Htool, and HDA; high level integration for asset importing, creation, forking, cross shot use, editing, pipeline info tagging, in-session version rolling, publishing, render system integration and override system; custom programmatic Htool script creation and insertion.
- **Houdini Pipeline Authoring Dev Suite:** High level integration of in-house project management and deployment system and SVN into Houdini UI for quick and easy creation of pipeline standard conforming HDAs and pipelin packages; Automated creation of templates for Houdini envs and folder structure, integration of standard svn commands including revert, commit, checkout, status, update, log, add; custom ui extensions for manipulating HDA comments and logs, custom tool scripts, TAB menu editing and manipulation, preset IDX archive insertion; upgraded help card generation wizard; creation, forking of pipeline HDAs; swapping individual, all or selected hdas between deployed and dev versions; sanity checking wizard with feedback recommendations; project visioning, deployment and testing ui integration of in-house py libraries



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- **Upgraded Created and Consolidated Various File Utilities and UI Utilities:** Created a parm reference tree navigator allowing navigation of dependencies in parameter references, created parameter dereferencing system allowing referenced values in expressions to “bubble up”, Automated cache setups for VDB/ABC/BGEO caches, high level scratch caching utility HDA for WIP, save replacements for hip files, standardizing names and allowing major/minor versioning and relocation to per-determined locations.

Weta Digital [Hobbit 3: Bo5a][BFG]—Wellington, NZ: Motion Capture Pipeline TD Sep 2014 – Mar 2015

- **Implemented Tools for manipulation and modification of small crowds in MoEdit:** Asset manager IO integration, GUI tools for loading, saving, asf/amcs and swapping crowd proxies from Nuance, file processing outside of application to setup small crowds for Motion Editing, and for removing setup pre-publish.
- **Created Solution for generation of crowd and proxies in MoEdit:** Automated proxy generation including skeleton/asf reduction, geometry reduction, modifications for temp MoEdit usage, compliant with Nuance, configurable for dept scenarios, individual or show-wide missing or force all gen and publish, CLI's, admin GUI.
- **Updated and enhanced in-house Motion Edit software for interfacing with commercial solutions:** asf loading, version updating of motion, skeletons, or creature on load, test utilities, GUIs, and general py/qt development
- **Created Custom timecode utilities in MocAp:** Encoding/decoding timecode making use of user field info.
- **Developed Audio and edit utility libraries in MoCap:** extracting and decoding bwav info chunks.

Newbreed VFX [Pyramid] [Horns]—Montreal, CAN: Sen Pipeline Technical Director Jan 2013 - 2014

- **Implemented Houdini pipeline:** Automation layer, associated GUI tools, and HDAs on top of Native OTL manager allowing asset manager integration and synchronization. Houdini deployment; Shot level asset system with in-session GUI round-trip editing and publishing of otls .
- **Houdini I/O:** Remote Alembic exporter (python libs 2 HDA Rops); Renderfarm Integration (Rop Nodes and Houdini ROP to Condor dependency solver), render scripts ; Environment configuration, KDE integration
- **Maya role geoCaching:** Alembic exporter python api MEL wrapper; Auto department sensitive generation of abc export jobs (including role assets, Katana SceneGraphXML, asset manager specific data), XML spec for Alembic job creation, and publishing on main dept asset publish;
- **Maya I/O and environment:** GUI SaveAs native UI replacement integrating asset management system; userSetup replacement for cascading initializations via rez; In-house file menu replacement
- **Katana Auto Shot building for lighting and lookdev:** role gathering sceneGraphXML generation, 1-click shot build with all models or animated geoCaches, materials, camera and layout as needed
- Rez templates for 3D applications, general pipeline support, development, and package managing

Dr D. Studios [Happy Feet 2]—Sydney, AU: Final Layout Output TD, July 2010 – Nov 2011

- Implemented initial Final Layout Dept Pipeline Layout
- **Created and maintained mass instancing solution for set dressing:** GUI tools (Houdini/Maya), HUD(maya); file specifications, keyshot/shot inheritance system, I/O, publishing and asset tools (Houdini/Maya); Cortex procedural, and Renderman(3Delight) runtime helper procedural
- **Created and maintained Footprint placement tools for paths/areas (Houdini):** 7 HDA nodes, Python Sop; GUI tools, interactive editing tools; geometry generation, and override/refinement system



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- Implemented Final Layout Auto Rigging, shot-building, and I/O scripts and utilities (Maya)
- Displacement cheating/editing tools (Houdini)
- Assorted Final Layout tools, scripts, pipeline, artist utilities, tools, HDAs/OtIs

Charlex—New York, NY: Senior Technical Director 3D R&D, March 2008 – April 2010

- **Credited as Pipeline on *Shape Shifter*, a short film** <http://motionographer.com/theater/shape-shifter>
- Created and maintained of lighting, pass, and rendering tools for Maya/MTOMR
- Integrated Houdini into existing pipeline
- Expanded Massive configuration and integration with pipeline applications
- Created and maintained Shader Bank of all shader sources and expedited Windows/Linux compilation scripts
- Created and maintenance of project and rendering assets (OTLs) for Houdini
- Wrote custom Mental Ray C++ shaders and maintained preexisting shaders
- Upgraded pipeline to 64-bit for 3D applications and rendering
- Wrote and maintained preexisting Rush renderfarm submission and render scripts for 3D applications including Maya (Soft/Batch/Mental Ray), Massive/Mental Ray, Houdini/Mantra
- Implemented and revised file post processing and pre-render processing scripts for Massive and Maya
- Scripted Workstation 3D application environment configurations
- Beta Tested and evaluated applications and recommended potential integration
- Compiled assorted plugins, scripted, and general pipeline work

Savannah College of Art and Design—Savannah, GA: Systems Administrator Oct '04 – Jan '08

- **Spearheaded investigation into Massive Prime and implementation of pipeline integration**
- Created system Image and application testing
- performed Renderfarm render troubleshooting and problem reports
- Scripted, and general updating, problem reports, troubleshooting, repairs, and workstation maintenance

Exhibition

- Featured in *Collisions* Gallery Group Exhibition, Mary Benson Gallery, Jersey City, NJ Nov '08 – Dec '08
- Starred in *Feathers*, a short film by Alex Blosser, 2007
- Photography exhibited at Shop SCAD May-Oct 2007
- Work Featured in *Dear Media, Do we See in RGB?* Exhibition of experimental video installations, De Soto Row Gallery, Georgia Aug 2006
- Work shown in Winter Visual FX show '06 at Trustees Theater at SCAD
- Solo Artist featured at Twirl, 23rd St. NYC from 8-18-01- 8-25-01
- featured in Student shows '99, winter '00, Spring '00, Senior Show '00 at SUNY Oneonta
- Cartoonist at The Stony Brook Press 1996-1997

Education:

Master of Fine Arts in Visual Effects & Master of Arts in Animation

Savannah College of Art and Design (SCAD), *Graduated November, 2006*

- Teaching Internship: Modeling Surfaces and Shaders I, Renderman RSL, RIB, MTOR, and Maya
- Research and Development for **AL Fuzzy Logic VEX operators** for MFA thesis



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- Procedural and Particle Animation, Rendering, Procedural Texturing, Programming, Digital Matte Painting, Storyboarding, Previsualization, Digital Compositing
- 3d Modeling and Animation, Classic Animation, Alternative Methods of Animation, Motion Capture, Gesture Drawing, Experimental Film
- Photography, Shakespearean Acting, Motion Graphics, Art History, and Media Theory

SIGGRAPH Now Hands-On Workshop: Machine Learning and Neural Networks 2020: mealtime class participant completing attending and completing all classes and projects in ML and data preparation.

Nvidia Deep Learning Institute [GTC 2020]: Online full-day Fundamentals of Accelerated Computing with CUDA Python **[SIGGRAPH 2018]:** Character Animation using Phase-Functioned Neural Networks, Deep Reinforcement Learning Agents on Atari Games with TensorFlow, Image Creation using GANs with TensorFlow & DIGITS, Analogous Image Generation using CycleGAN

SIGGRAPH '20 Ultimate '19/'17/'14/'12/'08/'07/'06/'05/'02/'01/'00/'99 full conference attendee '18/'13' select DIGIPRO '20 virtual '19/'18/'17 E3 '19/'18/'17 COMIC-CON '20 virtual '19/'18/'17 GTC Oct '20/May 2020 virtual THE PIPELINE CONFERENCE '20 virtual LA BLOCKCHAIN SUMMIT/CIS Spring'20/Fall'19/Spring'19/Fall'18

Bachelor of Arts in Art Studio & Bachelor of Arts in Music Industry

State University of New York College at Oneonta, *Graduated August, 2000*

Liberal Arts coursework at State University of New York University at Stony Brook. 1996-'97

- Teaching Assistant for Comp Art I 'Spring '00, Studio Assistant '99-'00 at SUNY Oneonta
- 2D and 3D Design, Drawing, Art History, Computer Art, Digital Video, Web Design, Audio Arts,
- Mass Communications, Film Production, Acting, Film History/Analysis, Story Boarding, Writing for TV/Radio/Film, Marketing, Merchandising, Creative Writing, Music Theory, History, and Analysis

Activities:

Author and Maintainer of www.eyevex.com: Building Houdini Tools and Scripts TD blog

- Educational resource documenting development of production ready scripts mostly in hscript and python
- Free download of all code demonstrated with inline documentation and GUI shelves and icons
- A series of posts late 2012 received over 600 views from over 300 visitors first 24 hours of posting

SLR Photography

- Over 20 years of total photographic experience in outdoor, portraits and nudes, studio, still life
- Avid digital photographer and image manipulator since 1997
- Extensive B&W Darkroom and Development experience including traditional cleaning and editing techniques

Fine Arts and Music

- Regular life drawing and documenting the people in the various cities I have lived
- Volunteer and assist at Rota Gallery, a non-profit co-op gallery educating in the arts 2014
- Enjoy traditional Illustration and ink drawing for small projects or recreation
- 15+ years of regular string playing recently focusing on bass, and casual player of numerous instruments
- Digital painting and printing

More

- Interest in AI Machine learning and Fuzzy Logic and enjoy coding, reading theory, and taking college courses
- Can be found on houdini listserv, odforce, and other forums or reading about math, physics, art and media theory
- Regular consumer of music and movie media, when not trying to make it to a movie theater or concert venue