Rony Edde

website | linkedin | github

Technical Skills

Software Development, GPU compute, Computer Vision, Shader Writing, Procedural Modeling & Animation, Rigid & Fluid Simulation
Languages: C, C++, C#, Python, Hscript, VEX, MEL, LaTex, Matlab
APIs/Libs: Houdini HDK, OpenCL, CUDA, OpenGL, Metal, OpenVDB, OpenCV, pybind11, NumPy, Matplotlib, scipy, Eigen
Developer Tools: VS Code, Visual Studio, XCode, Vim, Git
Platforms: Linux, Windows, MacOS

Experience

Apple — March 2017 – Present
Senior R&D Software Engineer — *Cupertino, CA*

Calibration
- GPU camera and sensor simulator framework for calibration of Vision Pro and all Apple devices

Applied Research
- GPU volumetric mapping
- ML models development
- Automated data annotation pipelines and data augmentation
- Real time environment sensing models
- Reality Composer prototype for accelerating content creation in AR/MR

Sony Pictures Imageworks — November 2014 – July 2015
Senior VFX Technical Director — *Vancouver, BC*

Hotel Transylvania 2
- FX shot work

Industrial Light & Magic — March 2014 – June 2014
Senior VFX Technical Director — *San Francisco, CA*

Transformers: Age Of Extinction
- Hypno Transformation R&D and setup
- FX shot work: Dynamic robot transformation, Engine thrusts, heat waves, debris and dust

Sony Pictures Imageworks — October 2013 – February 2014
Senior VFX Technical Director — *Vancouver, BC*

The Amazing Spider-Man 2
- FX Destruction, FEM simulations, water simulation shot work and setup

Method Studios — April 2013 – June 2013
Senior VFX Technical Director — *Santa Monica, CA*

Into The Storm (Category Six)
- FX shot work: Destruction smoke simulations, mist and rain

Rhythm and Hues — July 2011 – February 2013
Senior VFX Technical Director — *El Segundo, CA*

Into The Storm (Category Six)
- FX destruction R&D

Life of PI
- Developed ocean whitecaps tools for all the whitecaps, foam, waves, mist and churn elements
- FX shot work: Fluid simulations, rain volumes and drops, splashes and water sheeting

Digital Domain — June 2010 – May 2011
Senior VFX Technical Director — *Vancouver, BC*

Transformers: Dark of the Moon
- FX shot work: Engine thrusts, heat waves and smoke

Thor
- Developed tools for Storm (Digital Domain's proprietary volumetric renderer)
- Developed workflow tools and OTLs
- FX shot work using Houdini fluids and Storm for the Bi-Frost effect, shock waves, ripples and smoke blasts

ImageMovers Digital — December 2007 – June 2010
Senior Technical Director — *San Rafael, CA*

Mars Needs Moms!
- FX shot work (Particles and foam)

A Christmas Carol
- FX shot work (Houdini RBD simulations, dust, soot, fog vortex and ghost light streaks)

Pipeline tools
- Wrote OpenGL application for viewing GTO format geometry with textures, lighting, camera , display management and animated cache optimization
- Gave Houdini classes for the FX department to help integrate Houdini pipeline tools
- Wrote miscellaneous PyQt GUIs and tools for managing cache exports, both on the farm and locally
- Wrote a node based character picker library and interface for Animation TDs
- Wrote Houdini plug-ins for importing and exporting GTO format geometry
- Wrote Houdini plug-ins for importing and exporting in house proprietary fluid data
- Integrated Bullet libraries and Houdini plug-ins and implemented constraints

LucasFilm Animation — **April 2007 – November 2007**
Animation Tools Engineer — *San Francisco, CA*

The Clone Wars & unannounced feature

- Wrote GTK GUIs and utilities for the animation pipeline
- Ported tools from the ILM pipeline and added functionality to existing tools to seamlessly function in two separate pipelines
- Gave Houdini classes at ILM and LucasFilm Animation

The Orphanage VFX — **July 2006 – April 2007**
VFX Technical Director — *San Francisco, CA*

Die Hard 4: Live Free or Die Hard

- FX shot work and pipeline development for highway elevation collapse sequence
- Developed geometry fracturing tools for the highway destruction sequence

The Last Mimzy

- FX shot work and shader development on Cocoon and Wormhole effects

DNA Productions — **April 2005 – July 2006**
Technical Director (Layout, Set Dressing, Crowd and Animation Departments) — *Irving, TX*

The Ant Bully

- Wrote command line utilities for layout to accelerate workflow
- Developed OTLs to assist layout artists in organizing assets and exporting plates and shots from Houdini to Maya and created utilities for assets and hierarchies and error checking
- Released utilities both as GUI and non GUI versions for exporting entire sequences
- Designed the layout pipeline tools in Houdini
- Wrote a Houdini to Maya scene exporter that maintains hierarchy and animation
- Fixed pipeline errors and assisted artists and TDs in solving problems
- Developed self-contained programs with GUI that offer task scheduling and simulation and rendering automation
- Created a channel converter that generates Massive™camera data from Houdini files
- Wrote command line utilities for parsing and modifying large files and manipulating data
- Wrote MEL scripts that automate render processes and queues
- Wrote MEL scripts for detecting and fixing errors

Education

University of Pennsylvania — **on leave**
MSE in Computer and Information Science (ongoing) — *Philadelphia, PA*

Savannah College of Art & Design — **Graduated May 2004**
B.F.A. in Computer Art — *Savannah, GA*

Final Project

- Optimized rigging processes in Maya to increase real time performance
- Developed a car dynamics MEL script to simulate realistic car behavior
- Created a muscle setup and rig in Houdini with realistic deformations

Tutoring

- Helped students in understanding dynamics, math and MEL scripting
- Helped students understand the basics of the French language

Awards

- Scholarship for portfolio review
- Dean's list for 2 quarters

Lebanese American University — **Fall 1999 - Summer 2001 (transferred)**
B.S. in Computer Science / Graphic Design (unfinished) — *Beirut, Lebanon*

Grand Lycée Franco Libanais — **Graduated 1999**
Baccalauréat Français Scientifique Option Mathématiques — *Beirut, Lebanon*

Personal

Pulsar | *A Volume Modeling Plug-ins suite for Houdini*

- Developed a volume modeling suite of multi-threaded plug-ins for Houdini designed to rasterize geometric input into very high resolution volumes using a custom Perlin noise implementation

Siggraph 2012 Presentation | *Siggraph 2012 Presentaion on Volume Modeling Plug-ins* — **August 2012**

- Gave a technical presentation, tips and tricks and demo on the volume modeling techniques used in Pulsar

Gigacon Presentation | *Rendering Soft Particles/Sprites* — **January 2010**

- Gave a technical presentation on how to setup and render soft particles/sprites