Emre Yilmaz

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WORK EXPERIENCE

2011-present **TIPPETT STUDIO** Berkeley, CA **Senior Character TD**

Rigging tool development, rigging, and simulation. Creature TD on "Ted" and "AE 1000". Wrote deformers (Maya API) for relaxation and collision. Rewrote the company's pose space deformation plugin (following JP Lewis' paper.) Wrote an animation layer-aware transfer tool, and pose ui. Created new feather rigging system for a bird rig and worked with R&D to test the feather rendering system. Developed method of rigging clothing and attaching it to characters. Tested simulation options including DMM and Bullet plugins.

2007– 2010 **DISNEY / IMAGE MOVERS DIGITAL** Novato, CA **Senior Character TD**

Character TD specializing in difficult characters, and rigging tool development. Assigned characters whose rigs required an unusual level of rigging creativity and problem-solving. On *Mars Needs Moms*, rigged character *"Gribble"* which has dozens of animatable gadgets and belts, and an integrated nCloth simulation. On *Christmas Carol*, rigged the characters *Marley's Ghost* and *Ghost of Christmas Future,* with scripting and plug-in development including an animatable chain sim, and a projective distortion and flattening deformer. In rigging tool development (Python, C++, Maya API), wrote a widely used deformer system *Dynamic Shape* which performs collisions, surface relaxation, and dynamic simulation. It was used in *Marley's Ghost* and numerous chains and ropes. It also was a central part of our body deformation system, formed the basis of our "faux cloth" system on *Carol,* and part of our shape fix system. Helped strategize and develop the deformation pipeline.

Early 2011; Early 2007 **INDUSTRIAL LIGHT & MAGIC** San Francisco, CA **Creature TD**

Creature TD on *Pirates of the Caribbean 4*, *Cowboys and Aliens*, and *Pirates of the Caribbean 3.* Wrote a deformer in ILM's proprietary system Zeno, to collide mermaid hair against the body mesh. Ran cloth, rigid, and tentacle dynamic simulations, including numerous shots of Davy Jones. Used ILM's proprietary tools and Maya.

2002-2006 **DREAMWORKS / PDI** Redwood City, CA **Character TD**

Character TD on *Shrek 2*, *Shrek 3*, *Madagascar*, and the short film *Christmas Caper*. Rebuilt one of the main characters, "*Princess Fiona*", for *Shrek 3*, redoing her motion system, deformations, and clothing. Added preview texture display to our pipeline on *Madagascar*. Built character motion systems & skeletons, programmed custom constraints and operators, and set up animator interfaces. Rigged body deformations, including skin & muscle setup and joint shaping. Rigged clothing and wrinkles. Set up poseable dynamics such as hats, feathers, sleeves. Set up and tuned hair dynamics. Contributed to development of deformation editing and setup tools. Wrote new functions in our deformation software; some of my deformation callbacks and scripts were widely adopted by others. Also did pipeline maintenance and debugging, dynamics development, R&D testing, animator interface improvements, and clothing setup methodology.

1999-2002 **SESAME WORKSHOP** New York, NY **Digital Puppetry Supervisor**

Created and supervised performance animation characters on Sesame Street's "Elmo's World." Devised motion capture method with sensors embedded in foam rubber, so the Muppet performers could do digital and live performances simultaneously. Worked with NYC's SMA Realtime. Programmed custom plugins, capture UI, and take management system. Set up mocap gear, captured data on set, and managed the post process for the characters. Presented at Siggraph 2001.

1995-2000 **PROTOZOA** San Francisco, CA **Character TD, Animator**

Protozoa was a pioneer company in motion capture; I was a senior character builder and animator there. Rigged many characters, including deformations, skeletons, attaching articulators, writing expressions, connecting input devices, and programming high level controls. Developed ways to alter motion capture data for non-human characters, methods for puppeteering characters, and a face-tracking methodology. Programmed plugins to our software in C++, including dynamic simulation for tails and ears, dynamic lattices, mocap retargeting to non-human characters, simple IK, behavioral simulation, and motion cycling. Ran real time productions and demos (i.e., NAB, BBC, IBC, Siggraph.) Puppeteered and animated characters. Created animated shorts and web series. Directed projects for CTW, MTV, BBC, SGI, UPN, CBS, Planet Hollywood, CGCG, Weathernews, and others. Gave talks at Siggraph, CGIX, and MIT Media Lab.

1990-1994 **HARVARD / BROWN UNIVERSITIES** Camb. MA / Prov. RI **Research Assistant / Programmer**

CGI programmer, while studying Cognitive Science. Programmed driving simulation video games, virtual reality funhouse hallways, and data analysis (C/OpenGL.) Experiments on driving and attention (with Nissan), braking, motor control, and visual perception. Used motion capture to study walking and running. Studied the perception of surface shading, perspective, and film editing. TA in perception classes. Published a scientific paper.

SKILLS AND INTERESTS

3D Animation	Character setup: deformations and animation controls. Scripting, programming, deformers, custom UI's, plugins. Motion capture, joysticks, other motion input. Simulation and dynamics. Polygonal modeling, animation. Real-time cgi.
Software	Maya, Maya API, nCloth, After Effects, Premiere, Photoshop, and Motion Builder. In-house software (PDI, ILM).
Languages	Python, C++, Maya API, Pymel, MEL, Open GL, Open Inventor, tcsh, Matlab (Octave), Scheme, html, and French.
Puppetry	Construction and performance, in materials ranging from latex, foam rubber and fake fur, to garbage bags and duct tape. Created Muppet-style puppet videos for local cable in college, and costume puppets for stage plays.
Illustration	Drawing, cartooning, watercolor, pen and ink; published in *Quimby*, *Synapse*, and others.

EDUCATION

MA **Harvard University**
Major: Cognitive Psychology (Vision & Perception)
Honors: National Science Foundation Graduate Fellowship; Jacob K. Javits Fellowship

Sc.B. **Brown University,** Magna Cum Laude
Major: Psychology (Perception & Action); Pre-Med
Honors: Phi Beta Kappa, Sigma Xi, and Schlosberg Prize (best honors thesis)

- **Coursera, Udacity**: online classes
Machine Learning: *Prof. Ng (Stanford), ml-class.org (Coursera.org), Fall 2011. Statement of Accomplishment; perfect score.*
Artificial Intelligence for Robotics: *Prof. Thrun (Stanford), Udacity.com, Spr. 2012. Cert. of Accomp w/ Highest Distinction.*

- Additional coursework at MIT, Rhode Island School of Design, and Boston Museum School

AWARDS

Aug. 1999 **Prix Ars Electronica,** Honorable Mention in Computer Animation, *Bad Night* (Co-director)
Mar. 2000 **3D Design "Big Kahuna Awards",** Finalist, Corporate ID / Logo, *Noggin Station ID* (Co-director)
Feb. 1998 **World Animation Celebration,** Best Performance Animation, *We Should Go* (Co-director)
Feb. 1998 **World Animation Celebration,** Best Animation for the Internet, *Floops, Spider* (Animator, Director)
Dec. 2000 **Animation World Network,** #2 of '10 Best Web Series of 2000', *Smile Time / Birthday Party* (Co-director)

Also shown at SIGGRAPH Electronic & Animation Theaters, Resfest, NY Animation Festival, World Anim. Celebration, Annecy/NPAR 2000, Anima Mundi, Int'l. Childrens' Film Festival, SXSW, and others.

PRESENTATIONS

Aug. 2001 **Elmo's World: Digital Puppetry on Sesame Street. SIGGRAPH 2001: Animation Sketches.**
Presented the real- time puppetry methods we created to bring 5 furniture creatures to life for Sesame Street. Also presented at Siggraph-NYC: "Digital Puppetry in Real Time" event (Mar. 2001), and at PDI / Dreamworks.

Aug. 1997 **Motion capture and puppetry. SIGGRAPH 1997: Animation Sketches.**
Puppetry-like performing methods with motion capture, mappings between performer and character, and motion exaggeration. Also presented at MIT Media Lab, Broderbund, Bay Area Puppeteers Guild, Mocap S.I.G. at Siggraph.

Jan. 1998 **Animation on the Internet. CGIX-Amsterdam (invited speaker)**
Protozoa's VRML work, the production process for "Floops," and doing animation on the net.

PUBLICATIONS

Animation	DeGraf, B., and Yilmaz, E. H. (1999). Protozoa's methods, Animation World Magazine, Feb., Issue 3.11.
Perception	3 published papers (1994-1995).