Walt Disney Animation Studios has been combining the best in artistry and storytelling with cutting-edge technology to bring wonderful new characters and adventures to the big screen for audiences around the world.

http://www.disneyanimation.com/technology/
ART DIRECTABLE SIMULATION WITH MPM/FLIP

PROJECT GOALS AT WALT DISNEY ANIMATION STUDIOS:
WDAS Technology Department develops software to support production of our animated films. The internship will be held at our Burbank, CA studio for a duration of 12 weeks beginning in the summer of 2015.

The goal of this intern project is to improve the simulation technology used by the effects department to better integrate physical phenomena into stylized worlds that our characters live in. To that effect we would like to provide more artistic controls over the MPM/FLIP simulators used at Disney to simulate large scale natural phenomena like snow, mud, sand, water etc.

PROJECT RESPONSIBILITIES:
- Investigate previously published simulation control techniques
- Prototype controls for our in-house MPM/FLIP solvers
- Collaborate with production artists to get feedback
- Implement framework for controlling MPM/FLIP simulations
- Optimize the framework for performance
- Test the framework on production examples
- Integrate the framework into production pipeline
- Report results and present work to the Studio

INTERNSHIP REQUIREMENTS:
- Education: Masters/PhD candidate in Mathematics/Computer Science/Physics
- Strong C++ programming skills
- Experience/background in physically based simulation techniques; in particular, MPM/FLIP

PREFERRED QUALIFICATIONS:
- C++11
- Parallel programming experience
- Git/Version control
- Experience with Houdini HDK

http://goo.gl/YS5rmc ©2014 DISNEY
PROJECT GOALS AT WALT DISNEY ANIMATION STUDIOS:

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The Systems Mobile group is seeking a qualified candidate to design and develop a mobile application to discover, select, and book conference rooms in our building. Finding a room with the proper criteria at the right time can be challenging. The application will show room features, room availability, location in the building, and allow the user to book the room. The project must be fully documented for maintenance after the internship has finished.

PROJECT RESPONSIBILITIES:

The intern will be responsible for researching ways to access and present the data and build a mobile interface using HTML5. Both internal and external API’s will be used. We work in a collaborative environment, and the intern will work closely with the Media Engineering, Facilities, and Mobile Communications teams to create the mobile app. The intern will have a high degree of independence and judgement of design.

INTERNSHIP REQUIREMENTS:

- Undergraduate or graduate student with a major in Computer Science
- Experience specifying and building user interfaces
- Ability to present and champion implementation and design ideas
- Ability to effectively manage time over the course of a project
- Strong communication and interpersonal skills
- Knowledge of Linux and OS X operating systems

PREFERRED QUALIFICATIONS:

- Mobile development (iOS and/or android)
- PhoneGap or similar framework

DESIRED QUALIFICATIONS:

- Experience with Google API’s
- Coursework/experience with HTML5 / Javascript / CSS

http://goo.gl/6Gl2qc
INTERACTIVE HIERARCHICAL HAIR SIMULATION

PROJECT GOALS AT WALT DISNEY ANIMATION STUDIOS:
WDAS Technology Department develops software to support production of our animated films. The internship will be held at our Burbank, CA studio for a duration of 12 weeks beginning in the summer of 2015.

The goal is to develop a fast and interactive simulation tool to work with our existing hair modeling system, called Tonic. The tool would have two components: the first will automatically generate a collision model to represent the Tonic geometry using simulation primitives, such as cylindrical hair proxies, and then utilize these to provide interactive feedback to the artist for collision resolution, ensuring a plausible rest-state. The project should extend to the ability to run at multiple hierarchies of the hair groom defined by Tonic.

PROJECT RESPONSIBILITIES:
• Learn and understand existing hair pipeline
• Interact with artists to understand needs
• Survey of prior art related to simulation and collision detection
• Compare and contrast different methods for representing collision objects
• Develop interpolation algorithms between geometric representation and simulation primitives
• Investigate best method to provide collision detection for the chosen primitives
• Develop C++ Maya plugin for chosen algorithms which integrates with current tools
• Provide detailed documentation throughout process

INTERNSHIP REQUIREMENTS:
• Simulation and/or computational geometry experience
• Bachelor’s degree in Computer Science
• C++ expertise
• Unix experience
• Numerical analysis
• Sense of humor

PREFERRED QUALIFICATIONS:
• Maya experience
• Experience developing software in a team

http://goo.gl/3apydw ©2014 DISNEY
RIGGING IN THE CLOUD

PROJECT GOALS AT WALT DISNEY ANIMATION STUDIOS:
WDAS Technology Department develops software to support production of our animated films. The internship will be held at our Burbank, CA studio for a duration of 12 weeks beginning in the summer of 2015.

The project goal is as follows: Character animation is a major part of a CG film production. The performance (speed) of animation rigs greatly affects the quality of final animation on screens. This internship will focus on improving the performance of animation rigs by leveraging the computing power of the Cloud. Our goal is to investigate and prototype various features of Cloud Computing including task scheduling, bandwidth, latency, storage and scalability for animation. Potentially, this will be integrated with our existing tools in Maya for real-time rig performance.

PROJECT RESPONSIBILITIES:
• Develop tools and libraries for scheduling tasks
• Establish protocols for communicating between local jobs and remote machines
• Create effective ways to reduce latency
• Document and present the findings
• Develop a prototype and integrate with existing tools to show proof of concept

INTERNESHIP REQUIREMENTS:
• Graduate student in Computer Science or equivalent
• Experience with computer network & scheduling
• Good communication and presentation skills
• Experience with distributed computing, grid computers, and/or cluster computing
• Strong C++ & Python programming skills

PREFERRED QUALIFICATIONS:
• Experience with distributed computing platforms, such as Amazon Web Services (AWS), Google Compute Engine, etc.
• Knowledge of Maya & Character Animation

http://goo.gl/AsBs6m
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PRINCIPLED LENS MODELING

PROJECT GOALS AT WALT DISNEY ANIMATION STUDIOS:
WDAS Technology Department develops software to support production of our animated films. The internship will be held at our Burbank, CA studio for a duration of 12 weeks beginning in the summer of 2015.

Hyperion is our in-house, physically-based, global illumination path tracing renderer. It currently supports a relatively crude camera model that produces basic depth of field effects. We would like to extend Hyperion to handle vignetting, distortion, accurate Bokeh in-render rather than as a post-process. While adding these effects, we would like to provide them to the user in an intuitive way. The intern would be responsible for investigating camera modeling techniques, characterizing lens aberrations and empirically parameterizing them. This would involve collecting data, conducting simulations and performing statistical analysis.

ESSENTIAL INTERNSHIP REQUIREMENTS:
• Knowledge of the stage-of-the-art in global illumination and related rendering technologies
• Good knowledge of C++, preferably with the C++11 standard
• Strong statistical and analytical skills
• Bachelor’s Degree in Computer Science, Math, Physics, or suitable technological field

DESIRABLE REQUIREMENTS:
• Experience with SIMD optimization and multi-threading
• Working knowledge of computational software e.g. Mathematica, Matlab, or SAGE
• Good communication skills and experience working in a team
• An interest in photographic and/or cinematographic techniques and technologies
• Graduate degree or higher preferred but not necessary
DISNEY RESEARCH INTERNSHIPS

PROJECT GOALS AT WALT DISNEY ANIMATION STUDIOS:
Disney Research at Walt Disney Animation Studios (Burbank), is offering a number of openings for summer and potentially fall internships.

The goal of all the projects is to perform cutting edge research which one day may help create our animated films. Most candidates will be PhD students although exceptional master students may also be considered.

All internships are initially 13 weeks with flexible start and end dates. Successful projects will typically lead to a publication and all interns will get an opportunity to experience how Disney magic is made.

EXPERTISE OF PARTICULAR INTERESTS INCLUDE ANY ONE OF:
• Splines and subdivision surfaces
• Continuum mechanics
• Collision detection

ALL CANDIDATES SHOULD BE PROFICIENT WITH:
• C++
• Matlab or Mathematica
• Strong math skills
• Nonlinear optimization
• High performance computing
• Linux
• Excellent communication skills

http://www.disneyanimation.com/careers/open-positions
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