

Margarita Leonova

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EDUCATION

University of California San Diego

Bachelors of Science (B.S.) in Computer Science

La Jolla, CA

Sep. 2020 – Dec. 2022

West Los Angeles College

Associate's in Science for Transfer (AS-T)

Los Angeles, CA

Aug. 2016 – June 2020

PROJECTS

Particle Based Fluid Simulation | *Houdini, Vex*

Feb. 2022 - March 2022

- Implemented a basic Smooth Particle Hydrodynamics simulation using Houdini/Vex
- Used Navier-Stokes equation to implement fluid motion
- Rendered the scene with a few hundred particles splashing inside the box

Cloth Simulation | *Houdini, Vex*

Jan. 2022 - Feb. 2022

- Simulated realistic cloth using Houdini/Vex
- Implemented spring dampers onto a mesh grid, allowing elasticity without tear giving the illusion of cloth
- Produced wind by constructing a vector field onto the cloth's surface using aerodynamic force

Walking Wasp Simulation | *C++, OpenGL*

Jan. 2022 - Feb. 2022

- Rendered a walking wasp scene with C++/OpenGL
- Calculated forward kinematics to generate world space matrices for each joint in the wasp's skeleton
- Generated skin using the smooth skin algorithm
- Computed animation runtime with multiple channels and keyframes using Cubic Hermite Splines
- Developed an interactive GUI to adjust joint values

Unicorn Diary | *HTML, CSS, JavaScript*

March 2021 - Jun. 2021

- Worked with a group of 5 students to develop a web-based bullet journal
- Held sprint and retrospective meetings to document team progress
- Communicated with Teaching Assistant to update on team progress
- Developed low and high fidelity prototypes using prototyping tool Figma
- Created web-application skeleton using Bootstrap
- Developed mood tracking panel that records user mood three times a day and displays weekly summary

Student Information System | *Java, SQL*

May 2020 - Jun. 2020

- Developed students information system desktop application
- Created database using MySQL workbench that holds information about students and professors
- Developed interactive graphical user interface using JavaFX

ACTIVITIES

TEAM - Transfer Engineering Academic Mentorship Program

Sep. 2021 - June 2022

- Mentored two transfer students
- Helped mentees to overcome academical and personal challenges
- Held monthly meetings with mentees
- Communicated with both mentees and other mentors outside of the scheduled sessions

TECHNICAL SKILLS

Languages: Java, Python, C/C++, JavaScript, HTML/CSS

Developer Tools: Bootstrap, Git, VS Code, Visual Studio, Jupiter, Spyder, IntelliJ, Eclipse