

# Joe Chang

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TECHNICAL SKILLS	<b>Languages</b> <ul style="list-style-type: none"><li>• C++</li><li>• Java</li><li>• C</li><li>• Python</li></ul> <ul style="list-style-type: none"><li>• HTML/CSS</li><li>• JavaScript</li><li>• PHP</li></ul>	<b>Applications</b> <ul style="list-style-type: none"><li>• Visual Studio</li><li>• Eclipse</li><li>• PyCharm</li><li>• Unity</li></ul>	<b>Operating Systems</b> <ul style="list-style-type: none"><li>• Windows</li><li>• Mac OS</li><li>• Linux</li></ul>
EXPERIENCE	<b>Hierarchical Triangular Mesh Index for Astronomical Data</b> <span>June 2016 – February 2018</span> <i>Prof. Meng-Feng Tsai – National Central University   Taoyuan, Taiwan</i> <ul style="list-style-type: none"><li>• Collaborated with a team of 4 students using HTM concept to develop on SPARK on YARN (Hadoop) environment</li><li>• Assisted laboratory students on document writing</li></ul>		
PROJECTS	<b>VR Game – The Exam Artist</b> <span>January 2020 – May 2020</span> <i>Augmented, Virtual and Mixed Reality (CSCI 538) – University of Southern California   Los Angeles, CA</i> <ul style="list-style-type: none"><li>• Using Unity and Oculus Rift, we created a VR ‘cheating’ game. Player is in an exam with a strange and hard quiz. The only way to answer correctly is cheat in a variety of ways. Can he/she become the exam artist?</li></ul> <b>Inverse Kinematics</b> <span>March 2020 – April 2020</span> <i>Computer Animation and Simulation (CSCI 520) – University of Southern California   Los Angeles, CA</i> <ul style="list-style-type: none"><li>• Implemented Inverse Kinematics (IK), Forward Kinematic (FK), and Skinning on the given models. Users can drag the IK handles to animate the model, e.g. armadillo, in real time</li></ul> <b>Ray Tracing</b> <span>March 2019 – April 2019</span> <i>Computer Graphic (CSCI 420) – University of Southern California   Los Angeles, CA</i> <ul style="list-style-type: none"><li>• Developed with OpenGL. Built a ray tracer that could handle opaque, mirror surfaces with lighting and shadows. Included features such as antialiasing, soft shadows, and motion blur.</li></ul> <b>Roller Coaster Simulation</b> <span>February 2019 – March 2019</span> <ul style="list-style-type: none"><li>• <i>Computer Graphic (CSCI 420) – University of Southern California   Los Angeles, CA</i></li><li>• Developed using OpenGL and used Catmull-Rom splines to create the rails that the camera can move in a reasonable speed physically realistic over the rails</li></ul> <b>Interactive Video Player &amp; Hyper-Linking Video Tool</b> <span>November 2018 – December 2018</span> <i>Multimedia System Design (CSCI 576) – University of Southern California   Los Angeles, CA</i> <ul style="list-style-type: none"><li>• Developed an Interactive Multimedia Content that combines video with a non-linear information structure, allowing a user to make choices based on the content of the video</li></ul>		
VOLUNTEER EXPERIENCE	<b>Remote Mountain District Service</b> <span>June 2012</span> <i>Jie Shou Elementary School   Fuxing District, Taoyuan, Taiwan</i> <ul style="list-style-type: none"><li>• Provided educational service to elementary children in a remote village</li><li>• Designed courses and activities with a group of 20+ students</li></ul>		
EDUCATION	<b>Masters of Science in Computer Science (Multimedia and Creative Technologies)</b> <span>August 2018 – May 2020</span> <i>University of Southern California   Los Angeles, CA</i> <b>Bachelor of Science in Computer Science and Information Engineering</b> <span>September 2014 – June 2018</span> <i>National Central University   Taoyuan, Taiwan</i> <ul style="list-style-type: none"><li>• Received 5 Presidential Rewards, achieved as top 3 students in department</li><li>• Obtained a cumulative GPA 3.97 / 4.00</li></ul>		
EXTRA-CURRICULAR	<b>Student Association of Computer Science and Information Engineering Department</b> <span>2015 – 2016</span> <i>National Central University   Taoyuan, Taiwan</i> <ul style="list-style-type: none"><li>• Vice director of News and Information Division</li></ul>		
INTERESTS	<ul style="list-style-type: none"><li>• 10+ years of experience playing piano; 7 years of experience playing bass guitar</li><li>• 7 years of experience photography and editing films</li></ul>		