

# Yingjie Guo

(302)220-6606 | [Email: gyingjie@seas.upenn.edu](mailto:gyingjie@seas.upenn.edu) | [LinkedIn: linkedin.com/in/gyingjie/](https://www.linkedin.com/in/gyingjie/)  
[Personal Website: www.chestnutech.com](http://www.chestnutech.com) | [Github: github.com/YJ-Guo](https://github.com/YJ-Guo) | Philadelphia, PA

## EDUCATION

<b>University of Pennsylvania</b> <i>Master of Science in Engineering in Computer Graphics and Game Technology</i> Courses: Game Design, Physically Based Rendering, Computer Animation	Philadelphia, PA Dec. 2022 GPA:4.0/4.0
<b>University of Pennsylvania</b> <i>Master of Science in Engineering in Material Science and Engineering</i> Courses: Energy Storage and Technology, Fabrication of Nanomaterials, Optical Metamaterials	Philadelphia, PA Dec. 2022 GPA:3.8/4.0
<b>Beihang University</b> <i>Bachelor of Science in Chemistry</i> Courses: Analytical Chemistry, Inorganic Chemistry, Electrochemistry, Organic Chemistry	Beijing, China June 2019 GPA:3.7/4.0

## EXPERIENCE

<b>Graduate Teaching Assistant</b> <i>University of Pennsylvania</i> <ul style="list-style-type: none"><li>Mentor 50+ students for Python and Java homework in CIT590: Programming Languages and Techniques</li><li>Hold recitation for 30+ student weekly to solve their quiz and coding exercise questions</li><li>Develop two quiz question sets and code exercises</li></ul>	Aug. 2021 – Present Philadelphia, PA
<b>Legal Assistant</b> <i>Beijing H&amp;W Law Firm</i> <ul style="list-style-type: none"><li>Communicated with 50+ litigants for a class-action lawsuit over a housing lease contract</li><li>Documented and calculated the rental receivables for the housing contract dispute</li><li>Prepared bid document for a municipal bond issuing and won the bidding</li></ul>	Jul. 2020 – Sep. 2020 Chengdu, China

## PROJECTS

<b>PhysicsInvader</b>   <i>C#, Unity3D, Adobe PhotoShop, Adobe Premiere</i> <ul style="list-style-type: none"><li>A space shooter game mimicking the gameplay of Space Invader</li><li>Applied rigid body components to the ships and missiles so that they can bounce around</li><li>Added random awards when enemies get destroyed to buff the player</li><li>Designed a boss scene as addition to the original game scene as a bonus challenge</li></ul>	Sep. 2021 – Oct. 2021
<b>Mini MineCraft</b>   <i>C++, GLSL, OpenGL, Qt, Git</i> <ul style="list-style-type: none"><li>An interactive 3D world exploration and alteration program in the style of the popular computer game Minecraft</li><li>Worked as a team of three to deal with issues from art, engine, and multi-treading respectives</li><li>Optimized the game's rendering process to pass less data to GPU for computation</li><li>Bound static/animated and opaque/transparent textures to the building blocks in game with 2D samplers</li><li>Improved the fluid simulation with modification to the vertex shaders of the rivers blocks generated in game</li></ul>	Mar. 2021 – May. 2021
<b>PathTracer</b>   <i>C++, Qt</i> <ul style="list-style-type: none"><li>A photorealistic rendering engine with Monte-Carlo path tracing integrator and photon mapping integrator</li><li>Applied the multiple importance sampling method to reduce variance in the direct lighting estimation</li><li>Adapted the Russian Roulette termination method to reduce render time in the indirect lighting estimation</li><li>Utilized the KD-tree data structure to store meshes and photon information for photon mapping</li><li>Focused on multiple BSDFs to represent materials' property in renders</li></ul>	Jan. 2021 – Apr. 2021
<b>MircoMaya</b>   <i>C++, OpenGL, Qt</i> <ul style="list-style-type: none"><li>A mesh editor mimicking the functions in the style of Autodesk Maya or Blender</li><li>Implemented loading and displaying the mesh OBJ and skeleton JSON files function</li><li>Supported modifying the mesh from single vertex to skeleton</li></ul>	Feb. 2021 – Mar. 2021

## TECHNICAL SKILLS

**Languages:** C/C++, C#, GLSL, Java, Python  
**Developer Tools:** Git, Qt Creator, PyCharm, Unity3D, Eclipse, Google Cloud Platform  
**API:** OpenGL