Zachary Leong

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Technical Skills

Languages: Python (USACO Silver), Java, HTML, CSS, JavaScript, C#, Arduino, LaTeX, OCaml
Platforms and tools: Houdini, Blender, Unity, Unreal Engine, Plasticity, Substance Designer, Photoshop, Lightroom, Premiere Pro, Illustrator, Matplotlib, NodeJS, Flutter, command line, Git

Education

University of Pennsylvania *Philadelphia, PA*
BSE in Digital Media Design *May 2028*

- ➜ GPA: 4.0/4.0
- ➜ Relevant Coursework: Procedural Design Systems for Virtual Environments, Data Structures and Algorithms, Mathematical Foundations of Computer Science, Computational Linear Algebra, Advanced 3D Modeling

Lynbrook High School *Cupertino, CA*

- ➜ GPA: 4.0/4.0, Valedictorian *June 2024*

Relevant Experience

Penn Engineering Philadelphia, PA
CIS 1600 Teaching Assistant (Discrete Math) *January 2025 — Present*

- ➜ Co-lead weekly recitations of 15 students, focusing on engagement and exploring alternative approaches
- ➜ Host weekly one-on-one office hours, clarifying complex topics like induction, probability, graph proofs

General Robotics, Automation, Sensing, & Perception Laboratory Philadelphia, PA
Research Intern *October 2024 — Present*

- ➜ Designed user-friendly GUI for a 3D editor in Python using PyQTGraph and PyOpenGL for modeling kinematic origami chains in a team of three
- ➜ Supervised by PhD student Daniel Feshbach and Dr. Cynthia Sung in the Sung Robotics Lab

UPenn Game Research and Development Environment Club (UPGRADE) *Philadelphia, PA*
Game Developer *August 2024 — Present*

- ➜ Winner of the Penn UPGRADE Fall '24 Game Jam, created a cooking game in 24hrs in a team of four
- ➜ Implemented procedural terrain generation from shaders, chunking and threading for snowboard game
- ➜ Pioneered optimal auto-rotation WASD tank movement for club-wide 3D game project

Research in Science & Engineering (RISE) program *Boston, MA*
Trainee, Research Intern *June 2023 — July 2023*

- ➜ Analyzed neural behavior by modeling a 32-neuron network using Python's NEURON library
- ➜ Worked in a team of four to research the Dynamics of Nystagmus in an Oculomotor Neural Network Model

Projects

Procedurally Generated Guitar Animations From MIDI *March 2024 — April 2024*
Creator, Technical Animator

- ➜ Engineered procedural string rig in Blender to replicate realistic string movement
- ➜ Developed custom tool using BPY library to automate keyframe oscillations with integrated fall-off functions
- ➜ Applied CAD and NURBS modeling techniques and rendered a high-quality demo animation

Tetriminouno *January 2024 — February 2024*
Creator, Game Developer

- ➜ Developed Tetris mechanics, implemented raycasting for collision detection, created seven unique levels

Additional Projects

- ➜ Procedural 3D Stop Motion Plant Animation, 3D Modeling Showcase, Complex Origami Showcase