# Zhiyu Xiao

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## EDUCATION

**Beijing University of Technology (BJUT),** Faculty of Information Technology                    Beijing, China
*B.Eng. in Digital Medial Technology; GPA:3.84/4.00, 90.2/100.0; Ranking: 1/45*                    *6/2019*

**Dartmouth College**                                                                              Hanover, United States
*Computer science with a concentration in Digital Arts*                                           *6/2022(expected)*

**Selected Coursework:** Calculus, Linear Algebra, Computational Photography, Machine Learning, Data Structures and Algorithms, Computer Graphics and 3D Technologies, Game Development Practice,  Artificial Intelligence

**Honors:** 3rd Prize in Asian and Pacific Mathematical Contest in Modeling, 2017; Merit-based Scholarship for Outstanding Students, BJUT, 2016, 2017, 2018, 2019; Excellent Student Program of Beijing University of Technology

## PROFESSIONAL EXPERIENCE

**Byte Dance,** Hangzhou
*Technical Artist Intern*                                                                          *5/2021 – 8/2021*

- Responsible for the establishment and maintenance of the VFX production line and continuous improvement of VFX production efficiency
- Explore the boundaries of the capabilities of new technologies to produce and evaluate innovative stunt play
- Wrote GLSL shaders to achieve some post-processing effects and some custom stylized effects
- Implemented innovative play logic base on Lua language
- Work closely with designers, product managers and engineers to facilitate collaboration and communication across the team

**Egret Technology,** Beijing
*Front-end Intern*                                                                                *7/2018 – 10/2018*

 **Egret Coder:** a lightweight game compiler plug-in tool based on VS Code extension system
- Implemented functions including operation, cleaning and publishing into this plug-in tool
- Built a connection between tool and a runtime debug protocol to achieve Chrome debug function
- Supplemented two features of Egret xml code, including jump-to-definitions and error-checking via vscode language Server

*Texture Merger: a* platform tool to merge multi-textures
- Devised the Graphical User Interface based on Box Layout from React UI framework
- Optimized the algorithms of Depth-First, Breadth-First and Area-First image layouts
- Applied NET MVC (Model View Controller) framework pattern to ensure interface synchronization after an event occurred or data changed

## ACADEMIC EXPERIENCE

**Lego Game Development Based on Augmented Reality (AR) | Unity, C#, Vuforia SDK, Android**
*Undergraduate thesis, selected as Excellent Undergraduate Graduation Design of Beijing in 2019*        *1/2019 – 6/2019*
- Developed an AR building block game based on *Android* platform, providing child users with immersive AR experience
- Designed game interface, animal voxel models, toy blocks with animations and sound effects
- Integrated block operation functions including to create, delete, move, change color, and take screenshots in the game
- Achieved rendering effect of Lego artistic style through *Unity Shader Lab*

**Image Based Lighting | Eigen, C++**
*Final project of Computational Photography*                                                        *11/2020 –12/2020*
- Recover HDR image from LDR images with camera response curve calibration
- Tone-mapping with fast bilateral filter and local Laplacian filter
- Rendered IBL scene in Maya and custome OpenGL implementation
- Marker based corner detection for rendering reference frame

**An Artistic Rendering System with Multi-Shader Effects | Qt Create, OpenGL, C++**
*Independent Final Project of Computer Graphics and 3D Technologies*                                 *12/2016*
- Wrote shader scripts of rendering effects of oil painting, watercolor painting and sketching
- Used Qt Creator to build Graphical User Interface and to complete attributes setting features

**A Comprehensive 2D Game Engine Development | Type Script, HTML, Node, Electron**
*Group Leader & Chief Programmer of Game Engine Analysis*                                           *6/2017 – 7/2017*
- Managed the project process, coordinated programming and artistic aspects
- Adopted the finite state machine design pattern and command pattern and programmed the underlying frame image rendering system to realize a 2D game engine
- Realized configurable functions of a game editor, including flexible editing of map system, NPC system and mission system, improved the efficiency of game production significantly
- Collaborated to complete a 2D RPG game based on the game engine and game editor previously developed by the team

## TECHNICAL SKILLS

**Languages**: Lua, GLSL, C++, C#, Java, Unity Shaderlab, Python, Java Script, Type Script, HTML, CSS
**Tools & Frameworks**: Unity, OpenGL, 3D max, Maya, Substance Painter/Designer, Motion Builder, Adobe Photoshop