Anthony B. Bartholomew

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SKILLS

Languages	Game Engines	Rendering APIs	Development Tools	Frameworks
C/C++, C#, Lua, Python, JavaScript, Java	Unreal Engine 5, Unity	OpenGL, GLSL	Perforce, GitHub, BitBucket, Jira, Confluence, Rider, Visual Studio	Spring, Kafka, Cassandra, Node.js, Splunk

PROFESSIONAL EXPERIENCE

Associate Game Programmer
Jan. 2024 - Present

Heavy Iron Studios, Manhattan Beach, CA

Contribute to internal 3D game projects by developing and enhancing core gameplay systems, UI/UX elements, VR player mechanics, and animation features using Blueprints and C++ in Unreal Engine 5.

- Developed core VR player functionality to enable interaction with game world elements and 3D widgets.
- Created a full-body inverse kinematics (IK) system for VR player characters using Unreal Engine's Control Rig.
- Implemented UI/UX artists' design concepts with Unreal Motion Graphics (UMG) to create interactive game menus.
- Designed a death sequence animation system leveraging Animation Blueprints and Motion Warping.

Gameplay Programmer Intern | Rocket Racing
May - Aug. 2023

Psyonix, San Diego, CA

Worked on the game client team to develop and design player-facing gameplay mechanics for Psyonix's Rocket Racing, using both Blueprints and C++ in Unreal Engine 5.

- Developed skilled racing AI using behavior trees, providing a challenging experience for novice players.
- Improved driving mechanics by implementing new features for the vehicle's physics-based abilities.
- Exposed game assets to user-generated content tools for the Unreal Editor for Fortnite.
- Engaged in playtesting sessions to gather feedback and identify bugs, contributing to gameplay refinement.

Full Stack Developer
Feb. 2020 - Apr. 2022

JPMorgan Chase & Co., Columbus, OH

Focused on implementing front-end and back-end solutions using Java and JavaScript for the Community & Consumer Banking sector, enabling over 230,000 businesses to apply for payroll loans through the Paycheck Protection Program.

- Utilized Spring and Apache Kafka to implement distributed, event-driven microservices.
- Developed secure REST controllers to ensure safe communication between web services and back-end servers.
- Led back-end production deployments for new business requirements, framework version upgrades, and security updates.

Embedded Firmware Co-op
Aug. - Dec. 2017, May - Aug. 2018

General Electric Appliances, Louisville, KY

Developed C/C++ firmware for refrigeration and air conditioning products at a leading manufacturer of electronic appliances for homes and businesses.

- Utilized Test-Driven Development practices to ensure high-quality, maintainable, and reliable code.
- Designed control algorithms for auger motors, cooling fans, and user interface LEDs in open and closed-loop configurations.
- Leveraged appliance testing benches to validate firmware changes before merging into the production code base.

GAME PROJECTS

Lead Engine/Gameplay Programmer | Dodge Brawl | Team of 7
Apr. 2023

2D local multiplayer competitive dodgeball game built with a custom C++ engine, where players battle to be the last person standing.

- Implemented a component-based game engine architecture to develop internal engine and custom game behaviors.
- Designed an OpenGL rendering pipeline allowing team members to define custom materials for objects within the scene.
- Used GLFW to power the game's windowing system and enable input processing with multi-controller support.
- Developed a physics engine utilizing Runge-Kutta integration and 2D collision detection with impulse responses.

EDUCATION

M. S. in Computer Science
Aug. 2024

DigiPen Institute of Technology, Redmond, WA

B. S. in Computer Science and Engineering
Dec. 2019

The Ohio State University, Columbus, OH