

Rohin Knight

Programming

15 years of programming experience and 8 years in the games industry.
I love tackling new challenges and helping people solve complex problems.

Personal Info

E-mail
rohin.knight@gmail.com

Website
rohinknight.com

LinkedIn
linkedin.com/in/rohinknight

Github
github.com/rohinnz

Art Station
artstation.com/rohin

Skills

Soft Skills

- Excellent Written and Verbal Communication
- Complex Problem Solving
- Team Collaboration & Leadership

Web3

- Solidity, Yul, TypeScript
- Hardhat, Remix, ChainSafe, IPFS
- Smart Contract Security and Optimization

Game Development

- C# and C++
- Game Architecture
- Reusable Unity Components
- Unity Editor Tools
- Unity Profiler and Frame Debugger
- Unity Plugins (iOS & Android)
- Bug fixing (PC, WebGL, iOS, & Android)

Tech Art

- Maya Scripting (Python, MEL, Qt)
- Photoshop Scripting (JavaScript, UXP)
- CICD and Distribution Pipelines
- Creating / Modifying Shaders (URP)
- Image Editing (Fixing seams, correcting normal maps, etc)
- 3D Modelling and Rigging (Blender & Maya)

Misc

- Documentation
- Git (Branching, cherry-picking, hooks)
- iOS and Android Apps
- Static Websites (Jekyll, SEO)
- Drupal Websites (PHP, HTML, JS, SQL)
- Python Web apps (Pyramid, Flask, SQL)
- Standalone Desktop Apps (C# & C++)

Experience

2022-12 - present Web3 Game Developer

I am currently building a Web3 puzzle game where players will be able to mint their own puzzles as NFTs. There will be competitions for solving larger puzzles which will be a combination of normal NFT puzzles. Players will also be able to receive royalties when their NFT puzzles are used to create larger puzzles.

This project is currently being built on Ethereum L1 and has many challenges due to security and gas costs. Some of the challenges solved so far include

- Preventing front-running to submitted solutions
- Storing data on-chain using the least amount of storage.
- Finding a feasible approach for an expensive on-chain puzzle solver.

The Smart Contract source code is available on Github:
github.com/rohinnz/Block-Miner-Smart-Contracts

2022-03 - 2022-12 Senior Unity Engineer

Myria

Myria is an Ethereum Layer 2 solution for game and app developers. It allows for NFTs to be minted and transacted at lightning speed with no transaction fees.

I worked on **Moonville Farms** (A play-and-earn tycoon farming simulator) as the second lead programmer. It was a fully remote team across multiple time zones. I joined right at the start with the lead programmer and together we wrote the TDD, designed the initial architecture and then interviewed programmer candidates and scaled up the team.

Some of my achievements include:

- Interviewing candidates (sometimes as the sole interviewer), including for roles above my knowledge (i.e. .NET Server Dev)
- Writing code for our .NET Server including setting up unit tests.
- Writing documentation for the team. This included our C# coding standards and step-by-step guides for setting up projects and how to use Git with SSH on Windows (Non-programmer friendly).
- Setting up the world map. There were several challenges such as max WebGL texture size, pathfinding, and the pipeline for updating tile data.
- Setting up town water shader. We needed a seamless transition between two water shaders (Ocean and river) and the water surrounding the town could require any combination of the two.

2015-01 - 2022-03 Senior Technical Artist

PikPok

PikPok (www.pikpok.com formerly Sidhe Interactive) is one of New Zealand's oldest and largest game studios. We now have close to 200 employees and have published games for Console, Steam and Mobile. Our mobile games alone have been downloaded more than 350 million times.

I was the lead tech artist of a two-person team, providing support for projects via tooling, ensuring robust pipelines, performance optimisation, and shader/URP work.

Games I worked on included **Agent Intercept**, **Rival Stars Horse Racing**, **Into the Dead 2**, **Breakneck**, **Breakneck - Gamblit Gaming**, **Rival Stars College Football**, **I Am Monster**, **Zombie Rescue Squad**, **Four Letters**, and one game still in soft launch.

And I've done live ops work on **Into the Dead**, **Shadow Wars**, **Dungeon Inc**, **Rival Stars Basketball**, **Flick Kick Football Legends**, **Turbo Fast** and **Robot Unicorn Attack 2**.

Education

2004 - 2006

Wellington Institute of Technology,
Bachelor of IT

2007 - 2009

Victoria University of Wellington

Studied Chinese and other papers of
interest (part-time)

Unity Achievements:

- Built a UI scroll grid pooling system that allowed scrolling of thousands of items. Had an auto-layout feature with items able to span multiple rows/ columns. This package is now being used in all our projects.
- Built a 2D Soft Mask package with support for nested 9-slice masks. Optimised performance via shader variants and precalculated some parts outside shader to avoid shader branching for mobile.
- Added SpeedTree wind support to a custom shader. Also needed to build an editor tool to fix old SpeedTree assets.
- Added Unity's terrain height blending to an old terrain shader. I used albedo alpha for height so I could exclude the mask texture and reduce the size.
- Wrote a water shader with shore foam using the depth buffer.
- Backported shadow fade for a game using an old custom URP.
- Fixed distant tunnel lighting for a game that didn't use baked shadows: Modified shaders to use vertex colour and then built a Unity/Blender tool to modify vertex colour on every mesh used in tunnels.
- Built gradient skybox shader and set up Cinemachine cameras for boss fight scene
- Built several tools for animations, including copying animation events with relative or absolute time scales.
- Built a tool for duplicating whole game environments. Would duplicate Unity assets with materials and nested prefabs (Unity editor and Python script)
- Built an editor tool for multi-prop placement, with the ability to change brush size and randomize selection, rotations, scale, etc. (Despite being an editor tool, it still required some performance optimisation, including the use of square magnitude for comparing distances.)
- Built an editor tool for taking screenshots. Captured multiple resolutions in all available languages.
- Built iOS plugin for 3D Touch Support (before Unity had their solution)
- Updated in-house iOS & Android plugins for In-app purchases and Ads.

Maya and Photoshop Achievements:

- Gave a presentation at NZGDC 2021: www.youtube.com/watch?v=rg0VOF-2TW8
- Updated Maya script distribution so scripts get compiled and zipped on CI Server. Also set up Sentry reporting and unit testing.
- Rebuilt tool for reporting on UV usage (Used the more complex API OpenMaya for better performance and improved math, using triangle area formula instead of Heron's formula)
- Built a tool for bulk animation import, bake, playblasts, and export. Also added a feature to save clip notes and search through all clips in projects and mocap library.
- Built multiple Photoshop plugins using UXP. The most complex one would export screenshots in multiple languages and ensure they were below a target file size.

Other Achievements:

- Built Windows app to bulk install Unity versions with script templates and sync with Unity Hub. The tool included a self-update feature. Now used by everyone in Studio.
- Wrote npm script and pre-commit git hook for our Unity packages to enforce consistent namespaces, and correct format for changelog updates.
- Built a Pyramid web scraper to track the top 200 apps in the Play store, in every category for every country. Used Celery and Redis for handling multiple scraper tasks on a high-end Amazon server.
- Built a company floor plan web app (Flask) during a lab day. Could drag and drop people and furniture. Previously someone had to constantly update a PSD document.
- Did a lot of Live Ops work on our legacy C++ titles, fixing hard-to-repro bugs, Upgrading ad plugins, configuring build settings, etc.

2013-08 -

Developer

2015-01

Bank of New Zealand

iOS and Android app development. Worked on the Mobile Banking Apps.

2011-04 -

Mobile Device Developer

2013-08

Contact Software Ltd

iOS and Android app development. www.harvestyourdata.com.

2010	English Teacher in China Sun Yat-Sen International Kindergarten
2008-02 - 2010-01	Developer Catalyst IT Ltd Drupal website development. Worked exclusively in Linux.
2007-10 - 2008-02	Application Developer ConSit Systems Ltd C++ app dev: ArchiCAD Design Assistant Plugin & Question Rules Builder.

Other Work

Game Jams

Every year I try to take part in one or more game jams. I find it a rewarding learning experience, especially when working with people from other studios. Games I've worked on:

<https://v3.globalgamejam.org/2019/games/memories-2>

<https://jamesgamesbro.itch.io/welcome-to-the-chain-reaction>. (Plus did some earlier work on Last Message)

<https://globalgamejam.org/2018/games/heard-it-through-space-time>

<https://globalgamejam.org/2016/games/shake-it>

<https://olivieryc.itch.io/sweet-tooth>

<https://olivieryc.itch.io/synthrave>

Open Source Projects

<https://github.com/rohinnz/Maya-Scene-Exporter>

<https://sourceforge.net/projects/kanainvaders>

Other Interests

Chinese and Traveling

I love studying Mandarin (and a bit of Cantonese) and using it to communicate with my wife's family. We have travelled to China, Singapore, Japan, and other parts of Asia. We also love to attend local events like Lunar New Year.

Hiking and Snowboarding

In New Zealand, there are many beautiful hiking tracks and ski fields. For hiking, I recommend the Milford Track in Fiordland, and for skiing/snowboarding, I recommend Cardrona Ski Field.