

# Tom Smith

07415 152549 | [smith1999tom@gmail.com](mailto:smith1999tom@gmail.com) | <https://github.com/SmithTom6304>

## EMPLOYMENT

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### GameMaker

Software Engineer, May 2021 - Present

#### Plugin System

- Sole designer and developer of a modular plugin-based architecture for the GameMaker IDE, enabling dynamic loading and unloading of plugins at runtime.
- Designed and implemented a comprehensive library for plugin management, including loading, unloading, updating, and dependency checking, improving system flexibility and extensibility.
- Enhanced the IDE's modularity by enabling seamless integration of new plugin types, including custom user-created plugins, supporting community-driven feature expansion.

#### Package Manager

- Worked on a cross-functional team to deliver an efficient package manager, enabling the distribution of tooling as standalone packages, significantly improving developer productivity and release times.
- Proposed and implemented a multi-threaded solution, reducing user wait time by allowing concurrent operations.
- Designed and developed caching mechanisms, eliminating redundant requests for information in >80% of cases.

#### Package Build Pipeline

- Created and optimized a robust build pipeline that streamlined package releases from staging to production, increasing release frequency and reducing deployment errors.
- Added CI and release verification steps, ensuring issues are caught early and fail loudly.
- Played a pivotal role in shortening the release cycle, cutting time between releases by 75%.

#### Hotkeys System

- Developed a unified IDE hotkey system, consolidating multiple ad-hoc key handling systems into one scalable API.
- Created the "Redefine Keys" menu, allowing users to remap hotkeys, which improved accessibility and user customization.
- Extended the hotkey system to support "Hotkey Chords", providing more advanced shortcut functionality and in turn enhancing workflow efficiency for power users.

## EDUCATION

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### University of Dundee

BSc Computing Science, First Class with Honours

Dundee, Scotland

Aug 2017 - May 2021

## PROJECTS

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### Cooking Up Code blog | [cookingupcode.co.uk](https://cookingupcode.co.uk)

- Created a personal blog to combine my passions for cooking and coding, sharing tutorials, recipes, and coding tips with readers.
- Built with TypeScript, React, Next.js, and TailwindCSS to ensure a responsive, modern design.
- Deployed on AWS with Docker to facilitate smooth deployment and scalability, demonstrating cloud and containerization skills.

### Node Simulator | [github.com/SmithTom6304/node\\_simulator](https://github.com/SmithTom6304/node_simulator)

- Developed a node-based simulation engine for visualizing physics simulations (e.g., solar systems) in real-time.
- Built a custom graphics front-end using Rust and wgpu to visualize results, providing an interactive and educational experience.
- Long-term goals include expanding the simulator to simulate more complex systems, such as fluid dynamics, and adding more advanced rendering techniques.

## TECHNICAL SKILLS

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**Languages:** C#, Rust, Python, TypeScript / JavaScript, C, C++, SQL

**Tools & Frameworks:** Git, Docker, AWS, React, NextJS, Tailwind, PostgreSQL, nginx, Github Actions, Command Line Tools, Jenkins