

## Thomas Spader

### Professional Experience

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**UPS, data scientist** *Intern, Summer 2018*

- Designed and implemented **forecasting algorithms** for volume demand
- Wrote production **R** and **SQL** code to efficiently manipulate data on the scale of approximately **15 million data points**

**ServiceCentral, front-end work and devops** *Intern, Summer 2017*

- Spearheaded project to rewrite .NET UI in **React + Redux**
- Created a build and deployment pipeline to manage above

### Projects

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**tdengine** [*t-d engine*]: a 2D game engine written from scratch in C++

- Complete **entity-component-system** architecture; custom **OpenGL** interface; asset management system; **custom data allocators** and structures; full-featured **Lua** scripting

**Don't Blink**: a 3D engine + parkour game written from scratch in C++

- Supports **custom model loading**, complete in-game **level editor**, an implementation of **GJK collision detection**, and 3D audio. Written on top of **OpenGL** and **Windows API**.

**bullbot**: a deep-learning competitive Pokemon agent

- **Reinforcement learning agent** to play Pokemon Red at human-competitive levels
- Custom emulator for Pokemon Red; **web scraping** scripts to gather training data
- **Monte Carlo tree search** and other **machine learning** algorithms in C++

### Education

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**Georgia Institute of Technology** *2016 – current*

- 3.70 GPA over six semesters

**Advanced Academy at University of West Georgia** *2014 – 2015*

- 4.0 GPA over two semesters

### Skills

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**Languages** (in order of familiarity)

- C++; C; JavaScript; C#; Python; Lua; R; Java; Emacs Lisp; x86 assembly;

**Tools**

- **build tools** (CMake, Visual Studio, make, Webpack, Babel, node)
- **frameworks & libraries** (OpenGL, GLFW, Windows API, OpenAL; React, Redux, jQuery)
- **data science** (RStudio, Tidyverse, Weka, many web scraping tools, matplotlib)
- **misc.** Git, SVN, Emacs, SQL, IIS / Windows Server, GNU/Linux