

JACOBENGET

principal software engineer

...with both the skills and the fire to get things done

professional profile

Passionate software engineer with 15 years experience in video games, data, and backend engineering. Skilled in leading teams through complex requirements to deliver robust platforms and systems that empower.

Highly values collaboration, user advocacy, and thoughtful communication. Unique strengths include persistence and patience, API and UX design skills, and a deep love and skill for math.

technical skills

Advanced: Scala, C++, C, Python, Airflow, Java, Qt, Git, Rubik's Cubing
Intermediate: Spark, Databricks, PySpark, SQL, Docker, AWS, Redis, Node.js, Lua, JavaScript, HTML, CSS, WebAssembly, Datadog, Splunk, OpenGL, PICO-8, Jira, π Memorization
Familiar: Rust, Kubernetes, Jenkins, Kotlin, Android, Terraform, React, Kafka, Break-Dancing Poorly

professional experience

PERSONAL SABBATICAL · Minneapolis, MN

Stay-At-Home Parent / Personal Development

Sep 2022 – Present

At home and on canoe camping trips with my children; they're only young once. Participated in The Recurse Center, a retreat for curious programmers, and ported the video game *Doom* to WebAssembly while learning Rust. Touched grass.

RALLY HEALTH · Minneapolis, MN

Principal Software Engineer, promoted from Senior Software Engineer

Dec 2018 – Sep 2022

Technical lead for Rally Health's data platform. Was an integral part of a successful migration from a fixed Cloudera cluster to a self-service platform using Databricks driven by Spark ETLs written in Scala.

- Guided technical efforts across all Rally data teams, led meetings to align architecture and gather requirements, interviewed and mentored new hires, and drove code standardization and reviews.
- Developed a unified observability solution for the new data platform using Airflow, Splunk, and Datadog, providing a clear vision and solid foundation for implementing robust observability features.
- Designed and implemented a universal encryption method and a DSL to simplify transforming complex nested data in a Spark DataFrame. These elements crafted a smooth yet secure method for accessing sensitive patient information.
- Crafted a migration strategy for 170 ETLs from Spark 2 to Spark 3, enabling independent transitions for each ETL and allowing our 20 data engineers to work seamlessly without halting other development.
- Authored a Python library for secrets retrieval that, due to its robustness and ease of use, was quickly adopted by our central security team.

NERDERY · Minneapolis, MN**Senior Software Engineer**

Jan 2017 – Dec 2018

Led many JVM and Python consulting projects from start to finish, earning client trust by deeply understanding their needs.

- Led a team of engineers, in tight coordination with data scientists, to develop a Java-based ETL pipeline for a new Verizon product, creating a high-impact tool for generating company-specific security risk reports from third-party data.
- Saved a troubled client relationship via camaraderie to deliver a 10x speedup in their Python mortgage document app.
- Successfully rebooted the backend development of a delayed home delivery app by implementing a clear API contract and switching to a familiar framework, producing the prototype on time and up to snuff.

SENSE AI · St. Paul, MN**Senior Software Engineer**

Dec 2015 – Nov 2016

Hired as the sole backend engineer at this startup, but quickly took on all software development as SenseAi pivoted to focus on its core technology. Collaborated with the CEO to design and execute a development roadmap aligning with long-term goals and immediate customer needs.

- Optimized query patterns and server caching behavior to reduce AWS costs by 60% and increase throughput by 4x.
- Designed a versatile regression framework in C that enabled seamless testing of new models and optimization methods, and supported deployment of algorithms on mobile and cloud platforms.
- Engineered an Android library for accessing a device's existing, interpreted, and mathematically derived data (an example of each: GPS coordinates, magnetic force, ambient temperature). Built a mobile app around this library to help scientists visualize, record, and transmit field data.

HAVOK · Dublin, Ireland**Senior Software Engineer**

May 2012 – Sep 2015

Built a tools framework from scratch for Havok's video game technologies as part of a three-person R&D team. Focused on C++ and Qt to deliver a flexible, high-performance system of abstractions, GUIs, and data structures for content creators.

- Led scripting language integration into our tools framework to support automation and customization. Co-designed a binding layer for Lua and personally extended it to Python in three weeks, despite minimal Python experience.
- Developed an HTML/CSS/JavaScript prototype of our framework, using plugins to bind our core C++ logic to the browser's JavaScript environment. Achieved near parity with the original framework in just one month.
- Engineered a generic but highly customizable graph-based API and GUI for various applications, including particle and visual scripting editors, capable of handling 10,000+ GUI elements simultaneously.
- Designed intuitive controls and widgets for moving cameras and objects in 3D space, collaborating with artists to ensure smooth and responsive interactions.
- Created a UI for browsing and rendering game assets that supported split-second filtering of 100,000+ items.

ID SOFTWARE · Dallas, TX**Tools Programmer**

Nov 2009 – Apr 2012

Extended and maintained C++ tools for the *idTech5* game engine, focusing on user education, productivity, and stability. Collaborated with 150+ *Rage* and *Doom* team members to meet their unique needs promptly.

- Enhanced designer productivity by enabling in-game editing and reloading of entities, and by engineering a declarative language for customizing our level editor.
- Improved communication with our users by launching a blog to broadcast pipeline and tool developments.
- Revamped our animation tree editor with timeline previews and a GUI for custom blends, significantly speeding up development by providing immediate feedback for animators and designers.

Mobile Programmer

Dec 2008 – Nov 2009

Developed *Doom II RPG* for multiple mobile platforms in 10 months with a team of six. Halved image memory requirements for the low-end version of the game engine, cutting total memory usage by 33% and fitting the game within a 300 KB limit.

TRAFFIC TECHNOLOGIES · Minneapolis, MN

Software Engineer

Jan 2007 – Jun 2008

Promoted from part-time intern to full-time Software Engineer in 5 months, a year before my graduation, working with a 4-person team to develop a JVM-based traffic control system for DOT officials nationwide.

professional development

Personal projects and career overview hosted at jacobenget.com (2007-Present)

Participant (Spring 2024) Recurse Center, New York, NY

Continuing Education (2012-Present) 9 Computer Science and Math Courses completed via coursera.org

B.S., Computer Science (2008) University of Minnesota, Twin Cities, MN. (*Graduated with Honors*)

B.S., Mathematics (2004) North Dakota State University, Fargo, ND. (*Graduated with Honors*)

Studied abroad at the Independent University of Moscow, Russia, Fall 2002.