

JACOB VAVERKA

Software Developer

Solving problems and puzzles with math, science and technology.

PROFESSIONAL EXPERIENCE

2023
|
2021

● Sales Engineer

JuliaHub, Inc.

 Remote

- Contributor to industrial models and simulations run on distributed systems in domains such as automotive, manufacturing, and more.
- Integrator of Scientific Machine Learning (SciML) capabilities with large-scale industrial models to perform cutting edge simulations.
- Translator of customer needs into features for modeling and simulation framework, JuliaSim, and cloud computing platform, JuliaHub.
- Author of JuliaHub & JuliaSim documentation and white papers.
- Demonstrator to technical audiences using JuliaSim to accelerate, simulate, analyze, and understand physical models on JuliaHub.
- Trainer and coach to customers learning Julia, SciML and JuliaSim.

2021
|
2018

● HPC Application Developer

General Motors


 Detroit, MI

- Engineer of desktop application for CFD simulations built on top [Computational Model Builder](#), [OpenFOAM](#) and [ParaView](#).
- Engineer of back-end applications for encrypted file transfer across High Performance Compute environment using Boost C++ libraries.
- Developer of [Elasticsearch](#) pipeline to capture, monitor and display real-time job metrics of High Performance Compute simulations.
- Developer of client-side application for data transformation pipeline to compile, submit and run [OpenFOAM](#) simulations for various CFD applications such as aerodynamics, heat transfer, soiling, and more.
- Implementer of *In-situ* and *situ* visualizations built on [ParaView](#)
- Leader of small teams to complete targeted project deliverables.

2018
|
2017

● Decision Support Analyst

General Motors


 Roswell, GA

- Builder of complex queries and data pipeline for large-scale, global market communication campaigns and Customer Relation Management.
- Guardian and protector of data following regulations and best practices.

2017
|
2016

● Systems Developer

General Motors

 Roswell, GA

- Developer of global sales intelligence and planning tools for managing dealerships at national level across multiple GM brands.
- Builder and maintainer of ETL pipeline using R, SQL, and chron jobs.
- Reporter of key performance indicators using R, SQL, and IBM Cognos.
- Leader of discussion with end-user to gather requirements.
- Creator of dashboards and prototypes using R, SQL, and Tableau.



CONTACT

 [jvaverka.github.io](https://github.com/jvaverka)

 [jvaverka](https://github.com/jvaverka)

 [jacob-vaverka](https://www.linkedin.com/in/jacob-vaverka)

SKILLS

Modeling dynamic systems.
Maintaining HPC apps & systems.
Building full-stack & desktop apps.
Creating insightful visualizations.
Implementing complex algorithms.
Simplifying complex systems.
Leading diverse technical efforts.

Built with [pagedown](#).

Last updated Dec 06, 2023.

OPEN SOURCE CONTRIBUTIONS

Evolving

● **Open-source Contributions**

For Fun

 Remote

A short list of open-source projects that I have made small contributions to in the form of documentation, tests or small features.

- [DiffEq.jl](#)
- [AbstractGPs.jl](#)
- [Documenter.jl](#)
- [Franklin.jl](#)
- [Literate.jl](#)
- [LunarVim](#)

  I built the [SciML Book](#) website for MIT Course 18.337J / 6.338J

  I [rebuilt SciML Book](#) website for my own learning purposes.

TECHNICAL SKILLS

Evolving

● **Languages and Frameworks**

For Profit

 Remote

Through personal and professional projects I have learned and explored many programming languages and frameworks. Below is a list showing some of these languages sorted by proficiency (advanced to functional).

• **Language**

- Julia
- JavaScript
- Python
- R
- Ruby
- C++
- Java

• **Framework**

- [ModelingToolkit.jl](#)
- Shiny
- Dash
- Rails
- React
- VTK
- Qt

Fun Fact

In high school I learned to solve a [Rubik's Cube](#) and got pretty fast at solving it (<60 seconds).

Years later, I was gifted a [Megaminx](#) - a dodecahedron shaped puzzle with 12 faces and 50 movable pieces - and used only my knowledge of the standard 3x3 Rubik's Cube to solve it in a few hours.

Clifton Strengths

Top 5 natural talents & strengths.

[Learner](#)
[Ideation](#)
[Futuristic](#)
[Achiever](#)
[Intellection](#)



CONTINUED LEARNING

- 2022 ● **Advanced Statistical Regression**
Johns Hopkins University 📍 Remote
- 2021 ● **Mathematics of Finance**
Johns Hopkins University 📍 Remote
- 2019 ● **Matrix Theory**
Johns Hopkins University 📍 Remote
- 2019 ● **Statistics and Data Analysis**
Johns Hopkins University 📍 Remote



CERTIFICATIONS

- 2015 ● **Actuarial Science**
Exam P: Probability 📍 Remote



EDUCATION

- 2013 | 2009 ● **Bachelor of Science in Mathematics**
University of Georgia 📍 Athens, GA

i Fun Fact

You can follow my [continuous learning projects](#) in fields like applied math, computer science, and more.

i Fun Fact

Before landing my first IT job, I planned to pursue a career in actuarial science.