

# Ryan Kilpadi

Cambridge, MA | [github.com/rkilpadi](https://github.com/rkilpadi) | <https://ryan.kilpadi.com>

## EDUCATION

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### Vassar College

*B.A. in Mathematics, Minor in Computer Science*

**Major GPA:** 3.9/4.0

Poughkeepsie, NY

*Aug 2021 – May 2025*

### Université Paris Cité

*Study abroad semester in French – Mathematics and Computer Science*

Paris, France

*Sep 2024 – Dec 2024*

## PROFESSIONAL EXPERIENCE

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### Amazon Web Services

Boston, MA

*Software Engineer | AWS Parallel Computing Service, High Performance Computing*

*August 2025 – Present*

- Building an HPC service with a complex distributed architecture leveraging dozens of AWS services
- Responsible for full stack feature development spanning backend service logic in **Java**, front-end components in **React**, and infrastructure automation with AWS CDK

*Software Engineer Intern | AWS Parallel Computing Service, High Performance Computing*

*May 2024 – Aug 2024*

- Contributed to the launch of a product featuring highly complex architecture, leveraging dozens of AWS services
- Designed and implemented a solution in **Java** to update cluster Slurm configuration stored on **Docker** containers
- Orchestrated creation of required AWS resources using AWS CDKs in **TypeScript**
- Delivered comprehensive integration and unit tests using **Jest**, **JUnit**, and **Mockito** to achieve 100% coverage
- Developed scripts in **Python** and **Bash** to streamline developer experience, cutting deployment time by up to 90%

*Software Engineer Intern | AWS ParallelCluster, High Performance Computing*

*May 2023 – Aug 2023*

- Scoped, designed, and implemented a solution to support the Spack package manager on HPC clusters, reducing install times for large software packages from hours to seconds
- Automated seamless creation and configuration of AWS Services such as **API Gateway**, **Lambda**, and **S3**
- Gained hands-on **Linux** expertise through managing packages, users, and compilers using **Chef** automation
- Developed a **Python**-based CLI tool and co-authored an official customer-facing AWS blog post to showcase interaction with the Slurm REST API, enhancing visibility for the previous year's project

Seattle, WA

*Software Engineer Intern | AWS ParallelCluster, High Performance Computing*

*Jun 2022 – Aug 2022*

- Engineered a full-stack job submission solution by enabling the Slurm REST API on HPC clusters
- Implemented solution in a frontend using **React** and **TypeScript** and wrote tests using **Jest**
- Expanded API endpoints in a **Flask** backend and tested with **Pytest**

## INDEPENDENT PROJECTS

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### Tarka: A Verification-Aware Lisp Dialect

- Integrated an SMT solver into a compiler to automatically verify the mathematical correctness of programs
- Built on top of a toy Lisp-like language created for a compilers class

### The Math Behind Building a Neural Network From Scratch

- Wrote a blog post diving deep into the math behind neural networks and backpropagation
- Built a neural network from scratch to classify handwritten digits with 97% accuracy

### Portfolio Website

- Designed an interactive portfolio website using Svelte and p5.js
- More projects and information available here

## SKILLS

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**Programming Languages:** Java, Python, JavaScript/TypeScript, HTML/CSS, Bash, Ruby, Go

**Technologies and Tools:** Git, Linux, AWS, Docker, MongoDB, React, Chef.io

**Languages:** French