

# Rob Tompkins

Seasoned Principal Software Engineer Generalist with 15 years of experience

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## SKILLS

**Programming Languages:** Java (8, 11, 17, 21), Python, Typescript, Javascript, Go, PHP, C++

**Libraries & Frameworks:** Spring Boot, Hibernate, JPA, Gradle, Apache Maven, Apache Commons, React, Vue, Node, Angular, Flask, Boto3, Dataframes, JupyterLabs, JupyterNotebooks, Angular (1.2 - 1.8), TensorFlow

**Database & Storage:** SQL, PostgreSQL, MySQL, MongoDB, Redis

**DevOps & Cloud:** Kubernetes, Terraform, CloudFormation, Ansible, Amazon Web Services/AWS (S3, EC2, RDS, EKS, CloudFront, API Gateway, CodePipeline, CodeBuild, CodeDeploy, DynamoDB, Route 53), Google Cloud Platform, Docker

**Other:** Machine Learning, Artificial Intelligence Open Source Leader, HTML, CSS, RESTful APIs, TDD, Web3, Git, Nginx, Apache, Enterprise scale systems both cloud and hybrid, Large Language Models, Generative AI

## EXPERIENCE

### Apache Software Foundation (volunteer)

*Member* | March 2016 - Present

*VP, Jakarta EE Relations* | July 2019 - July 2024

**Technologies:** Java, Maven, Javascript, HTML

- VP Jakarta EE Relations - established an official relationship between the Apache Software Foundation and the Eclipse Foundation for the sharing of resources.
- Apache Commons PMC member - regularly doing updates and releases to the most used Java libraries in Maven Central.
- Published a Paper in IEEE Software Engineering on Open Source Governance
- Fixed commons-fileupload CVE that caused the Experian Databreach
- Fixed numerous CVEs (critical security vulnerabilities)
- Helped with Equifax data breach fix
- Spoke on numerous occasions on topics related to Open Source Governance, Apache Commons, and the introduction of the Commons Text library
- Wrote and released the first versions of Commons Text
- Keeps Apache Commons compatible with Java versions 8, 11, 17, 21, and 23

### Vertical Relevance (Consulting at FIS)

*Staff Consultant* | June 2024 - August 2025

**Technologies:** AWS, Java, Conductor OSS, Harness, EKS, Kubernetes, Gradle, Spring Boot, PostgreSQL, Docker, Kubernetes, TensorFlow, Python

- Created a collection of microservices to service the handling of the ISO 20022 payment protocols.
- Integral part of a team writing a real-time payments engine that became the core of the FIS business model interfacing with TCH and FedNow
- Developed processes and best practices to enable our engineers to efficiently and consistently produce high quality software
- Built all systems related to the storage and maintenance of data for the real-time payments
- Regularly using lambda expressions and multithreading to manage large volumes of calls through the system.

### **NASA - Fornax Project (contractor)**

*Sr. Systems Engineer* | May 2023 - April 2024

**Technologies:** EKS, GitLab, Helm, Python, JupyterLab, Grafana, Prometheus, Docker, Kubernetes

- Managed the infrastructure for the Fornax Project
- In charge of project security for Fornax
- Helped centralize all of the astrophysics external satellite data for NASA in AWS for consumption by the general public (authenticated) using JupyterNotebooks
- Installed the first Grafana and Prometheus installation in the NASA EKS environment at Goddard Space Flight Institute
- Created a collection of ephemeral EC2 GitLab runners based on serverless apis

### **Naborforce**

*Principal Software Engineer (head of security)* | December 2022 - May 2023

**Technologies:** AWS Control Tower, AWS IAM, GCP, GitHub, Python, Terraform, Help Desk, PHP, MySQL, Docker, Kubernetes, AWS Security Hub, AWS Guard Duty, C++

- Migrated all applications from a single AWS account to a multi-account structure for the purposes of having Root, Production, Dev, Logging, and Security accounts all being separate
- Implemented a zero trust AWS IAM environment
- Created a linkage between GitHub and AWS with infrastructure as code to manage all AWS assets, including IAM and AWS SSO
- Architected the entire network for the company both on-premises and in the cloud
- Led efforts as the Chief DevOps engineer leading the way by creating ephemeral GitHub runners based on a terraform project that spawned serverless apis to interface with the GitHub webhooks.
- Saved the company \$100,000 by finding GCloud Credits for telemetry.

### **Capital One**

*Sr. Lead Software Engineer* | May 2022 - December 2022

**Technologies:** Java, Gradle, Git, Python, Open Source Office, Docker, Kubernetes

- Managed Capital One's Open Source Projects
- Architected Capital One's Software Bill of Materials for vulnerability remediation.
- In charge of Capital One's Open Source software policies with regards to licensing

## **Patch**

*Chief DevOps Engineer* | September 2020 - May 2022

**Technologies:** AWS, GitHub, CircleCi, GCloud, EKS, Mongo DB, Drupal, PHP, C++, Docker, Kubernetes

- Again, Architected a new multi-account AWS strategy for patch to migrate all their applications into using EKS
- Implemented a zero trust AWS IAM environment
- Helped migrate from CircleCI to GitHub actions
- In charge of managing GitHub, CircleCI, AWS, GCloud, EKS, and the Network both on-premises and in the cloud.

## **Koalafi**

*Staff Software Engineer (head of network security)* | May 2019 - September 2020

**Technologies:** AWS, Python, Terraform, CloudFormation, Go, EKS, ML, AI, Docker, Kubernetes, AWS Guard Duty, AWS Security Hub, Machine Learning, C++

- Architected a new multi-account AWS strategy for patch to migrate all their applications into using EKS - (Root, Production, Dev, Logging, and Security accounts)
- Implemented a zero trust AWS IAM environment
- Built all the systems using GitLab, and GitLab runners
- Created a BreakGlass login for Production
- Head Security Engineer
- Deployed ML (Gradient Descent) models in Python and C++ for consumption by the business to do credit evaluations.

## **Capital One**

*Master Software Engineer* | June 2014 - May 2019

**Technologies:** AWS, Java, Python, Terraform, CloudFormation, Angular, EKS, Docker

- Main CICD engineer for all of Card Online Servicing
- Main CICD engineer for CreditWise
- Migrated CreditWise Application from on premises to the cloud
- Migrated Card Online Servicing application from on premises to the cloud
- Did the Java work to migrate CreditWise from using plain text SSN to using encrypted SSN
- Open Source Leader at Capital One making the most open source contributions across the entire company
- Worked on the internal Java Framework that serviced all of the rest APIs that the company runs

## **CapTech Consulting**

*Consultant* | August 2010 - May 2014

**Technologies:** Java, Maven, SQL, Apache Ant, WebSphere, WebLogic, JBoss, Tomcat

- Started Capital One's internal java framework
- Did SQL reporting for BonSecours
- Standardized Virginia Worke's Compensation legal docket system

- Managed Lowes mobile orchestration RESTful API layer

## **U.S. Freestyle Kayaking Team**

*Member* | 2000, 2001, 2007

- Represented the United States overseas in Freestyle Kayaking
- Placed 6th, 8th, and 8th in World Championships

## **EDUCATION**

### **University of South Carolina - *M.S. Mathematics***

Columbia, SC | 2007 - 2009

Mathematical Logic, Applied Mathematics, Theoretical Computer Science, Combinatorics on Words, NP-Completeness

### **Virginia Tech - *B.S. Mathematics***

Blacksburg, VA | 2002 - 2007

Won the undergraduate prize in Mathematics. Combinatorics on Words, Linear Algebra, Logic

### **Virginia Tech - *B.S. Engineering Science and Mechanics***

Blacksburg, VA | 2002 - 2007

Biomechanics, Applied Physics, Systems Engineering, Engineering Science

## **Selected Talks**

- ApacheCon 2020, Apache RoadShow 2019, “From No Open Source Experience to PMC of Commons and Apache Member,”  
<https://www.robtompkins.com/apachecon-2020-from-no-oss-experience-to-pmc-and-member>
- All Things Open 2019, Insecurities and Vulnerabilities,  
<https://www.robtompkins.com/ato2019-insecurities-and-vulnerabilities>
- ApacheCon 2017, “Introducing Commons Text,”  
<https://www.robtompkins.com/apachecon2017-text-presentation>

## **Publications**

- Drost-Fromm and R. Tompkins, “*Open Source Community Governance the Apache Way*,” in IEEE Computer, vol. 54 no. 4, pp. 70-75, April 2021, doi:  
<https://www.computer.org/csdl/magazine/co/2021/04/09399942/1sF3Go1prSU>
- C. R. Tompkins, *The morphism with unstackable image words*, preprint  
<https://arxiv.org/abs/1006.1273>
- C. R. Tompkins, *Latin square Thue-Morse sequences are overlap-free*, Discrete Mathematics and Theoretical Computer Science, 9, 2009, 239-246